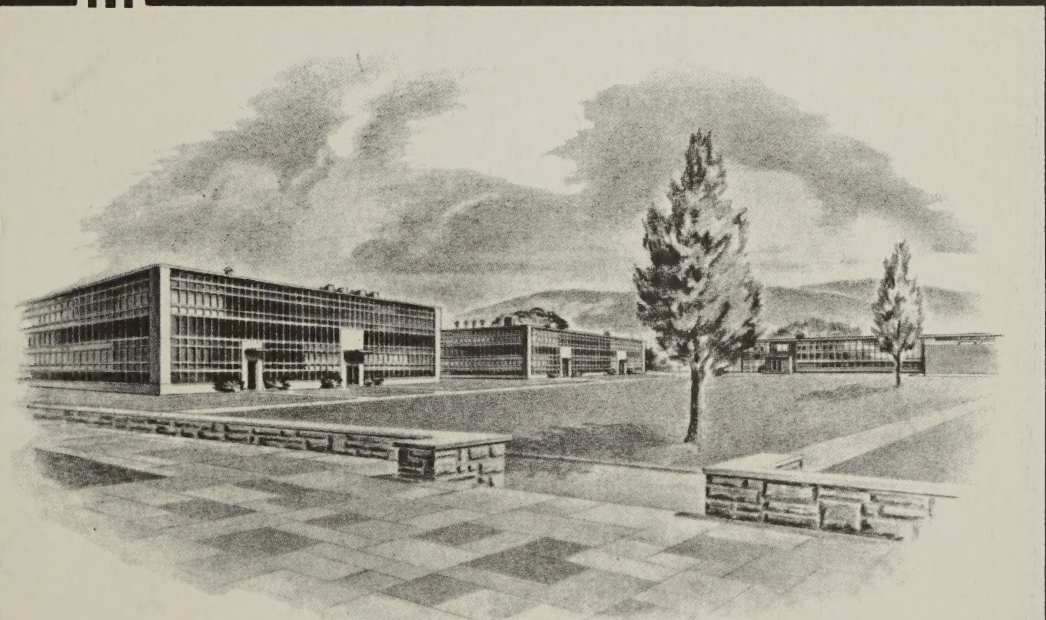


Broome Technical Community College

Catalog 1963-1964



Broome Technical Community College

CALENDAR 1963-1964

SUMMER TERM 1963

August 30, 1963	5:00 P. M.	Classes End
September 3-6		Exams
September 6	5:00 P. M.	Co-operative Period Ends

FALL TERM 1963

September 9	8:00 A. M.	Orientation and Co-operative Period Begin
September 11	12:00 Noon	Orientation Ends and Classes Begin
November 27	12:00 Noon	Thanksgiving Recess Starts
December 2	8:00 A. M.	Thanksgiving Recess Ends
December 2-4		Exams
December 5-6		Registration and Counseling
December 6	5:00 P. M.	Co-operative Period Ends

WINTER TERM 1963-64

December 9	8:00 A. M.	Classes and Co-operative Period Begin
December 20	5:00 P. M.	Christmas Recess Begins
January 6, 1964	8:00 A. M.	Christmas Recess Ends
March 9-11		Exams
March 12-13		Registration and Counseling
March 13	5:00 P. M.	Co-operative Period Ends and Spring Recess Begins

SPRING TERM 1964

March 16	8:00 A. M.	Co-operative Period Starts
March 23	8:00 A. M.	Spring Recess Ends
March 27	12:00 Noon	Classes dismissed—Good Friday
June 5	5:00 P. M.	Classes End
June 8-10		Exams
June 11-12		Registration and Counseling
June 12	5:00 P. M.	Co-operative Period Ends
June 12	7:30 P. M.	Graduation

SUMMER TERM 1964

June 15	8:00 A. M.	Classes and Co-operative Period Begin
August 28	5:00 P. M.	Classes End
August 31-September 2		Exams
September 3-4		Registration and Counseling
September 11	5:00 P. M.	Co-operative Period Ends

FALL TERM 1964

September 14	8:00 A. M.	Classes Begin
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BROOME TECHNICAL COMMUNITY COLLEGE

Binghamton, New York

CATALOG FOR COLLEGE YEAR 1963-1964



ACCREDITATION and REGISTRATION

Broome Technical Community College is a member of the Middle States Association of Colleges and Secondary Schools. The College is supervised by the State University of New York, and its curriculums are registered by the State Education Department. In addition, certain curriculums are accredited by professional accrediting bodies.

STATE UNIVERSITY OF NEW YORK

Broome Technical Community College is one of the 55 colleges that comprise the State University of New York (SUNY), which was established by the State Legislature in 1948. There are 15 four-year colleges which are wholly operated by the state, 25 two-year colleges which are co-sponsored by the state and the counties in which they are located, and six two-year colleges which are entirely state operated. In addition, SUNY conducts six contract colleges, a graduate school and two medical centers. And many of the four-year colleges have graduate programs.

Although the units of the State University are separated geographically, all are united in their purpose — to improve and extend opportunities for youth to continue their education after high school. The geographic separation, moreover, enables students to enjoy the advantages of attending relatively small colleges, even though State University is one of the largest state universities in the country.

State University is guided by its motto: "Let Each Become All He Is Capable of Being."

It offers a wide variety of courses in its 55 undergraduate units. These courses include two-year programs in such technical curricula as chemistry, electrical and mechanical technology, as well as technical courses in industrial, agricultural and health service areas.

State University is governed by a Board of Trustees, which is appointed by the Governor. Its function is to plan the total development of State-supported higher education. But each of its colleges is locally administered. Students, therefore, should write directly to the college in which they are interested for admission forms and information.

BOARD OF TRUSTEES

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Chairman

President of Government

Affairs Foundation, Inc.,

Albany, N. Y.

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President of New York Telephone Co.,

New York City

JOHN A. ROOSEVELT

Bache & Co.,

New York City

JAMES J. WARREN

Albany, N. Y.

DON J. WICKHAM

Commissioner of State Department

of Agriculture and Markets,

Albany, N. Y.

CENTRAL ADMINISTRATIVE STAFF

President of the University

Appointment pending

Provost

Harry W. Porter, Ph.D.

Executive Dean for Institutes

and Community Colleges

Paul B. Orvis

Associate Executive Dean for

Institutes and Community Colleges

Kenneth T. Doran, Ed.D.



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HISTORY OF THE COLLEGE

Broome Tech graduated its first class in 1949. These students had entered what was then known as the New York State Institute of Applied Arts and Sciences at Binghamton in the fall of 1947. The original institute was one of five founded in the state in 1946, following the pattern of six agricultural and technical institutes which New York had established earlier in the century. The first programs offered were all terminal in nature and included Chemical, Electrical and Mechanical Technologies, as well as Medical Office and Technical Office Assistants courses.

In 1953 New York relinquished operating control of the school to a new sponsor, the County of Broome, under provisions of the newly-enacted State Community College Law, and the name was changed to Broome County Technical Institute. In 1957 the name was again changed to Broome Technical Community College to reflect the increasingly comprehensive nature of its educational offerings.

In keeping with the comprehensive objectives of this community college, a university-parallel curriculum was instituted in the Engineering Sciences in 1959 and a two-year program of Liberal Arts and Sciences was started in the fall of 1962.

For its first five years, the school was housed in a refurbished State Guard armory in downtown Binghamton. This building was gutted by fire in September of 1951, and for the next five years Kalurah Temple and two other buildings in the city provided temporary quarters. In 1957 the college moved to an attractive new \$4,000,000 campus on the north side of Binghamton on route 11. The first addition to the original campus came with the construction of Titchener Hall which was dedicated on May 17, 1963. The present 53-acre site should accommodate anticipated expansion for the next two decades.

OBJECTIVES OF THE COLLEGE

1. To provide the environment and the experiences which promote the students' vocational competency, individual growth and social responsibility through integration of the following:

KNOWLEDGE. The acquisition of facts, principles, theories and insights which are fundamental to the understanding of a specialized field of study and of life itself. Cognizance of common sources of information for further intellectual growth.

PROFICIENCY. Development of analytical thinking and language abilities for the comprehension, evaluation and communication of knowledge. Development of laboratory techniques relevant to the students' chosen vocational field.

ATTITUDES. The stimulation for personal growth — vocational, intellectual, cultural and physical. The appreciation of and commitment to desirable social values.

2. To commit the resources of the College to the business, industrial, educational and cultural enrichment of the community.

A MESSAGE FROM THE PRESIDENT

By CECIL C. TYRRELL *Broome Tech President*

Choosing a college is probably the most important decision a high school senior has to make in his young life. To be sure of making the proper decision, the student should think the problem through carefully, keeping several points in mind.

The major purpose of attending college is to prepare for future work and future living. The kind of college you choose will determine what kind of work you will do and what kind of life you will lead. So deliberate carefully and choose wisely.

There is a time in life for everything, and these are the years for attending college and preparing yourself for the adult years ahead. Most students attend but one college and make just one preparation. A second chance is rare, and it is costly in terms of time and money. Moreover, it is usually unnecessary if the first choice has been correctly made.

Broome Technical Community College is a two-year college offering nine curriculums. We, therefore, offer a high-school senior many different preparations to choose from. But whatever course of study he or she decides upon, he should have a strong desire to do well, and he should realize that a purpose is vital to give direction and meaning to his preparation.

This desire and purpose are the beginning of maturity, and students who attend college without maturity do not receive all the benefits of a college education. The State University of New York's motto is, "Let each become all he is capable of being." Maturity of purpose and a strong desire



CECIL C. TYRRELL

Broome Tech President

are essential, if one is to get the maximum from his college opportunity.

The college years are full of fun, too, and Broome Tech has a comprehensive co-curricular program that includes sports, music, dramatics, clubs and social activities. But the high-school senior and college freshman should keep in mind that a proper perspective keeps these things secondary to the main purpose of preparing for the years ahead.

This preparation is more than just learning how to make a living. That is the goal of a vocational school. A college, on the other hand, also strives to teach its students the responsibilities of adulthood in the democratic society that makes America the great nation it is.

PROGRAMS OF THE COLLEGE

Broome Tech is a two-year, co-educational community college. It seeks to provide, through a full-time day program, part-time extension division, and summer school, educational opportunities for all who can benefit by them. The full-time day curriculums combine general education with technical education to prepare young men and women for permanent employment after graduation. In addition three programs (Liberal Arts & Sciences, Business Administration and Engineering Science) provide opportunity for transfer to higher institutions. An Associate degree is conferred on graduates of the College.

The extension division offers a wide variety of specialized unit courses and sequential programs leading either to a diploma or an Associate degree.

The summer program is organized mainly to meet the needs of high school graduates who wish or require additional course work before entering or returning to college.

Applicants to the college should consider carefully the type of program they wish to pursue, for the nature of the offerings makes it all but impossible for a student to switch easily from one curriculum to another after commencing his studies. The student should also try to decide whether he wishes to be prepared to accept employment immediately upon graduation, or to prepare himself for further college training at a senior institution upon completion of work at Broome Tech.

TECHNICAL PROGRAMS

In the area of technical education, the college offers five programs. One, Engineering Science, is in effect the first two years of an engineering curriculum, and students who do satisfactory work in it should experience little difficulty in transferring to engineering colleges.

The other four are designed to train engineering technicians in the fields of Mechanical Technology, Chemical Technology, Electrical Technology and Civil Technology. Graduates of these programs are prepared for immediate employment in various types of technical work upon leaving the college.

DENTAL AND MEDICAL

Women interested in the field of health services may seek admission to the Dental Hygiene or the Medical Office Assistant programs. Dental Hygiene graduates are qualified to take the state licensing examinations which permit them to perform oral prophylaxes either in dental offices or schools. If they choose, they may take advantage of a special program arranged with the State University College at Cortland, New York, which leads to a Bachelor of Science Degree in Health Education through additional study of two years and one summer's duration.

Those enrolled in the Medical Office Assistant course are trained to assist in physicians' offices, not only in many routine phases of laboratory work, but in secretarial practices as well.

BUSINESS

The Business Technology curriculum is designed to prepare graduates for immediate employment in one of five fields: Executive Secretarial, Engineering Secretarial, Accounting, Business Administration or Marketing. Although this program is terminal in nature, a number of its graduates have earned higher degrees in business administration and business education.

LIBERAL ARTS AND SCIENCES

This curriculum is a university-parallel course, designed especially for the student who wishes to transfer to a senior institution after graduation. A sound liberal arts education is basic to many of the professions, such as medicine, law or teaching, and applicants who have such a goal would be well advised to consider this selection. It is also considered excellent preparation for further schooling in business administration. Many students simply do not know what field to select as a goal. A liberal arts course may serve as a foundation from which a choice of major study can be made at a later date with a minimum loss of time.

GENERAL EDUCATION

Students in all programs spend approximately one fourth of their time studying such general education subjects as English, psychology and economics. The College recognizes that in addition to technical competence, a graduate should study those subjects which aid in understanding people and their every-day working and personal inter-relationships.

TECHNICAL PREPARATORY

The requirements vary for admission to the different programs. Students who lack the minimum requirements for admission to the engineering technology programs may request enrollment in the Pre-Technical course. This is a year-long sequence of technical work and English, with special emphasis on physics and mathematics. Students in this program are not considered to be regular college students and no college credits are granted for completion of these courses. At the end of the year, students are evaluated by the faculty and must be recommended for entrance to a regular program in the subsequent year. (See page 78.)

ADMISSION

Entrance Requirements

A high school diploma or the equivalent is required for entrance to all curriculums. All applicants must take the Scholastic Aptitude Test of the College Entrance Examination Board. Applicants must appear at the College for a personal interview.

In addition, an applicant must meet the minimum requirements of physical ability required by the occupational field in which he wishes to engage. He must also be recommended by his high school principal or guidance counselor.

In planning for college, it is advisable that the high school student enroll in a college preparatory curriculum. The following table should help in planning a high school program.

Curriculum	Recommended High School Subjects	Other Desirable High School Subjects
Business	2 units Mathematics 2 units of Science	Shorthand and typing will qualify the student for advanced courses
Chemical	Chemistry 3 units Mathematics including Trigonometry	Physics, other advanced Mathematics
Civil	Physics 3 units Mathematics including Trigonometry	Other advanced Mathematics
Dental Hygiene*	2 units Mathematics Biology, Chemistry	Social Studies
Electrical	Physics 3 units Mathematics including Trigonometry	Other advanced Mathematics
Engineering Science	Chemistry, Physics 3½ units in Mathematics including Advanced Algebra	College preparatory courses
Liberal Arts and Sciences	2½ units Mathematics 4 units in any combination of science, language, or additional mathematics	College preparatory courses
Mechanical	Physics 3 units Mathematics including Trigonometry	Other advanced Mathematics
Medical Office Assistant	2 units Mathematics 2 units of Science	Typing, Shorthand

*Applicants for Dental Hygiene are encouraged to take the Dental Hygiene Aptitude Test of the American Dental Hygiene Association. Information will be sent following receipt of application for admission to the College.

Pre-Technical Program

Applicants who do not satisfactorily meet the entrance requirements may apply to enter the Pre-Technical program. This preparatory year program, under the direction of the Extension Division, provides opportunity for the student to strengthen his academic background so that he may enter the full-time program with a better expectation of successful accomplishment.

Application Procedure

New students are admitted only in September of each year. However, applications will be accepted at any time during the year.

An application for admission must be made on official forms supplied on request by the Admissions Office.

A deposit of \$10 must accompany each application. The deposit is non-refundable but is applied as an advance payment on the student activity fee if the application is accepted. Once a student is accepted, he will be billed for an advance payment of \$50 on tuition. This is also non-refundable.

Each applicant will be interviewed by members of the Committee on Admissions. An appointment will be made after the applicant's deposit, application and other required credentials have been received. Appointments for interviews will normally be made after January 1 of each year.

Advanced Standing Students

Applications are accepted from students who have been enrolled in other accredited colleges if they meet satisfactory entrance requirements.

Transfer of credit for advanced standing is subject to the approval of the department chairman and the registrar.

At the time of application, students wishing to transfer credit should request the registrar of the college they have attended to forward an official transcript to the Broome Technical Community College Admissions Office.

Advance Placement Examinations

Applicants who have completed any of the Advance Placement Examinations sponsored by the College Entrance Examination Board may apply for credit and advanced placement. Such requests will be handled similar to transfer credit and will be granted where applicable, subject to the approval of the department chairman and registrar.

Late Registration

An applicant may not register later than two weeks after the beginning of the fall term except by special permission.

ACADEMIC STANDARDS AND REGULATIONS

Requirements for Graduation

THE ASSOCIATE IN APPLIED SCIENCE DEGREE

1. Degree requirements: a minimum of 102 quarter credits
2. Curriculum requirements:
 - a) A minimum of 60 credits in a student's major field. These are courses intrinsic to and required by the various curriculums.
 - b) A minimum of 30 credits in general education or liberal arts courses.
 - 1) Social Sciences: a minimum of 9 credits
 - 2) Biological and Physical Sciences (including Mathematics): a minimum of 9 credits
 - 3) Humanities: a minimum of 9 credits in English (composition and/or speech)
 - 4) Electives (or additional courses) in the foregoing fields comprising a minimum of 30 credits in the liberal arts and sciences or general education areas
3. Quarter point averages must total 8.60 for a six-quarter program or the equivalent thereof
4. Satisfaction of all obligations to the College

THE ASSOCIATE IN ARTS DEGREE

1. Degree requirements: a minimum of 90 quarter credits (in addition to physical education)
2. Curriculum requirements: a minimum of 72 credits distributed as follows:
 - a) Social Sciences: a minimum of 18 credits
 - b) Biological Sciences and Physical Sciences: a minimum of 12 credits
 - c) Mathematics: a minimum of 9 credits
(this requirement may be satisfied if candidate has completed $3\frac{1}{2}$ units of secondary mathematics through Advanced Algebra)
 - d) Humanities: a minimum of 27 credits, of which 18 shall be in English (composition, speech, and literature) and 9 of which shall be in other subjects in the humanities
 - e) Electives: 80% shall be in the fields of study listed above
 - f) Physical Education: a minimum of 6 credits. Exception to this requirement may be made by the Dean of the College
3. Quarter point averages must total 8.60 for a six-quarter program or the equivalent thereof
4. Satisfaction of all obligations to the College

GRADING

Honor Points Per Credit Hour	Grade	Explanation
4	A	Outstanding achievement in meeting the objectives of the course
3	B	Above average achievement
2	C	Average achievement
1	D	Below average achievement
0	P	Poor achievement — no honor points
0	F	Failure to meet the objectives of the course
0	W	Withdrawn before the middle of the term
0	WP	Withdrawn passing (following the middle of the term)
0	WF	Withdrawn failing (following the middle of the term)
0	I	Incomplete. Work to be made up within one week or by special arrangement with the department.
0	S	Satisfactory.

Scholastic Standing

To remain in satisfactory standing, a student must earn a point average of 1.2 the first term, 1.4 the second term, 1.5 the third term, and 1.5 for each succeeding term until graduation.

Any student who does not maintain this minimum point average in any term is placed on probation for the following "on campus" term.

In order for a student to remain in good standing, he must also demonstrate mature attitude, interest and cooperation.

Grades are issued at the end of each term. Students will be also notified of their academic standing at the approximate mid-point of each term. Satisfactory progress will be denoted by an "S" letter grade. Progress below average (below C) will be denoted by an appropriate letter grade.

Residence Requirements

Students transferring from other colleges will, as a general rule, be expected to complete a minimum of one year's work at Broome Tech, immediately prior to being granted the Associate Degree.

Transfer to Senior Institutions

Broome Technical Community College will not as a general rule encourage students who have less than a C (2.0) average to transfer to other colleges.

Honors

At the end of each term, students who have earned an average of 3.0 or above are placed on the Honor Roll. Those who have earned 3.5 or better are named to the President's High Honor List.

Attendance Regulations

Every student is expected to attend all sessions of classes and laboratory work for which he is registered, and all absences and tardinesses will be recorded.

Excuses for absence will be granted in accordance with instructions outlined in the Student Handbook. Unexcused absences from classes are considered valid reason for dismissal or other disciplinary action.

Withdrawal

A student compelled to withdraw at any time must immediately notify the Student Personnel Office and complete the proper termination form. Failure to comply with this regulation will cause the individual to forfeit his right to honorable dismissal and to lose any refund of fees.

Dismissal

Students may be considered for dismissal for the following causes: More than one consecutive probationary period, more than one failing grade in a term, failure to earn a point average of 1.0 in any term; irregular attendance; neglect of work or financial obligations; failure to comply with College rules and regulations or official notices; conduct unbecoming a student.

Any action leading to the requested withdrawal of a student is taken up by the Executive Committee. Any student may petition his department staff to waive the academic requirements of the College leading to dismissal; such petitions are acted upon by the Executive Committee upon their presentation by the department concerned. The College reserves the right to be the sole judge in all matters pertaining to dismissal.

GENERAL INFORMATION

EXPENSES

Tuition

For New York State residents \$300 per year
(Payable at the rate of \$100 per term)

For out-of-state residents \$600 per year
(Payable at the rate of \$200 per term)

Tuition for all students is payable at the beginning of each of the first three quarters of the school year, regardless of cooperative work assignment.

Fees

Tuition and fees are payable at the Finance Office not later than the last day of the first week of each term. Any refund is at the option of the College. The following fees will be charged, with the College reserving the right to change any of them:

STUDENT ACTIVITY \$35 per year

The \$10 deposit required with the application becomes advance payment on the activity fee, if the applicant is accepted. The activity fee entitles students to admission to varsity games, informal dances and parties, as well as a subscription to the student newspaper (Tech Talk) and the yearbook (The Citadel).

HEALTH \$23 per year

This fee covers the cost of the student health insurance program. If a student is covered under his family's health insurance, however, a statement to this effect will be accepted instead of the health fee, if the statement is signed by a parent or by the student, if he or she is of age. This statement should cite the name of the insurance program under which the student is covered, and it should be turned in to the Finance Office.

GRADUATION \$20

This fee is paid at the start of the term preceding graduation. One half is for life membership in the Alumni Association.

LATE REGISTRATION \$5

LABORATORY

Refundable \$10 each per year to cover breakage in Chemistry and Physics. If breakage is less than \$10 worth, then appropriate amount is refunded.

Non-refundable \$5 per term for each Chemistry laboratory course for use of chemicals. In Chemistry only.

Books and Supplies

Each student provides at his own expense the necessary books and instructional materials. These may be purchased at the Book Store maintained by the Faculty-Student Association for the convenience of the students. The cost varies, depending on the curriculum, from about \$45 to \$125 per year.

Uniforms and dental instruments for Dental Hygiene students will cost approximately \$100.

Living Accommodations

The College does not maintain dormitories. Local students, of course, live at home. Other students are required to live in rooms which have been inspected and approved by the College, or at the YMCA or YWCA. Lists of approved rooms are maintained and students are assisted in finding suitable living quarters.

Board and Room

The cost of board and room for out-of-town students is dependent upon the demands of the student. The average cost varies from \$18 to \$25 per week.

Length of Curriculum

All programs are two years in length. The college year is divided into four terms of approximately eleven weeks each. Students enrolled in the cooperative work curriculums — Electrical Technology and Mechanical Technology — spend a total of six terms on campus and one term in industry. Students in the other curriculums spend three terms on campus each year.

Cooperative Work Program

In the work-study plan, students are placed in jobs related to their major field of study for one employment period. Students are paid the prevailing wages for the job they do. Cooperative students in the technology curriculums earn about \$800 to \$1000 for the cooperative period.

The program offers other distinct advantages:

1. It is exploratory. The student has a chance to survey and evaluate a number of different jobs within his field. At the same time he can take stock of his own abilities and interests.
2. It is an opportunity to correlate classroom studies with actual work experience.
3. It is a means of demonstrating the importance of human relations in the work situation.

Cooperative work students are expected to "earn their own way," to perform the duties required without special favor. At the end of the period, employers submit a report covering the students' performances.

FACULTY-STUDENT ASSOCIATION

The Faculty Student Association is a non-profit organization, incorporated under New York State law. It is operated by the faculty officers with a student advisory board. One of the functions of the association is running the College Book Store.

FINANCIAL AID

Many young people are denied the advantages of higher education because of the costs. Broome Technical Community College has made a sincere effort to overcome these economic barriers through its Student Aid Association, which in cooperation with industries and organizations in Broome County, has established both a Scholarship Fund and a Loan Fund.

Students in the Electrical and Mechanical programs, moreover, have one term of cooperative work as part of their courses. This may enable them to earn enough money to pay for their entire tuition costs at the College.

Scholar Incentive Award

Under the provisions of the Scholar Incentive Program, most students attending Broome Technical Community College who are residents of New York State are eligible for a Scholar Incentive Award. The award is a direct grant payable to the student each term. For details, students should contact the Student Personnel Office.

Payments to Broome Tech students will amount to approximately \$100 per student each academic year. A student who does not complete a full academic year may be requested by the State of New York to return part of the grant proportionate to the amount of the term not completed.

It is the responsibility of the individual student to complete and file an application for the Award. Applications for the Scholar Incentive Award may be obtained from, and when completed should be sent directly to, the Division of Educational Testing, State Education Department, Albany 1, New York.

Applications should be filed before July 1, but will be accepted up to December 1. Applications for the spring semester have an April 1 deadline. Students must apply each year.

Student Loans

Students enrolled at the college are eligible to borrow from either the New York Higher Education Assistance Corporation or from funds made available under the auspices of the National Defense Loan Program. Students may borrow to a maximum of \$1,000 at nominal interest rates and with repayment periods up to 10 years.

More information may be obtained from the Student Personnel Office.

Scholarships

Nearly fifty scholarships and grants-in-aid of about \$200 each have been established to recognize outstanding scholarship and/or financial need of applicants to Broome Technical Community College. These awards are made primarily to entering freshmen students to help defray most or all of the first year's expenses. Students may apply for these grants at the time of making application for entrance to the college.

Contributors to the scholarship fund:

Anso Division of General Aniline
& Film Corp.
The Azon Corp.
Binghamton Container Co., Inc.
The Binghamton Savings Bank
Binghamton Cold Storage
Broome Tech Alumni Association
Broome Tech Business Club
Cadre Industries Corp.
Chernin & Gold, attorneys
Clark-Cleveland, Inc.
Conrad & Virginia Klee Foundation, Inc.
Crowley's Milk Co.
David E. Meade Scholarship Awarded
by Kiwanis Club of Binghamton
Endicott Forging & Manufacturing Co.
Fairbanks Co.
First-City National Bank

International Business Machines Corp.
LaMonica's Restaurant
Link Aviation Corp.
Marine Midland Trust Co.
National Office Management Association,
Triple Cities Chapter
New York State Electric & Gas Corp.
Olum's of Binghamton
Ozalid Division,
General Aniline & Film Corp.
Mr. and Mrs. Charles Pierson
Savory Oil Co., Inc.
Scintilla Division, Bendix Aviation Corp.
Stow Manufacturing Co.
Technical and Engineering Council
of the Southern New York Area
E. H. Titchener & Co.

Endowment Fund Scholarships

Individuals and industrial and professional organizations have donated and/or willed money to the Broome Technical Community College Scholarship Endowment Fund. This money is invested to produce interest or dividends that are used to establish scholarships.

Five scholarships of \$200 each from this source are:

Jeannette G. Johnson Memorial Scholarship
Paul F. Titchener Memorial Scholarships (2)
General Scholarships (2)

Special Scholarships

Following are contributors to specially designated scholarships:

Binghamton Chapter, National Secretaries Association Scholarship. Established in 1954. One scholarship of \$200 to be awarded to a graduate of one of the Triple Cities high schools entering the Business curriculum. Recipient to be judged on the basis of scholastic ability, character, personality and financial need.

Broome County Dental Society Scholarship. One scholarship of \$100 and a plaque awarded at capping service to a Dental Hygiene student who showed outstanding ability and campus leadership during her freshman year.

Broome County Medical Society Scholarship. An annual award of \$200 to that student completing the first year in the Medical Office Assistant program who has been selected by the faculty on the basis of aptitude, initiative and scholarship.

Civic Club of Binghamton Award. Established in 1953. Awards of \$125 are given to three young women, graduating from one of the Binghamton high schools and wishing to enter the college.

Endicott Rotary Club Scholarship. An annual award of \$300 granted to a graduate of Seton Catholic High School or Union-Endicott High School in the city of Endicott.

Industry Advancement Program of the Associated Building Contractors of the Triple Cities, Inc. An annual award of \$200 given to a freshman entering the Civil Technology program; first preference to a son of a member of either Carpenter Union Local #281 or Local #1575, next preference to a son of a member of one of the building trade unions affiliated with the Binghamton Building and Construction Trade Council AFL-CIO.

Irving Schwab Memorial Scholarship. A \$300 award to an applicant who can meet all entrance requirements, and who in addition has financial need and has shown outstanding ability as a basketball player.

Johnson City Lions Club Scholarship. An annual award of \$200 awarded to a graduate of Johnson City High School.

Lou Rappaport Freshman Scholarship. One scholarship of \$200 to be given to a worthy student graduating from Chenango Valley Central School.

Sales & Marketing Executives of the Southern Tier Award. This is an award of \$200 to be given to a freshman at the end of his first year at Broome Tech who elects the Business-Marketing Option in his senior year. The recipient is to be chosen on the basis of need, character and scholastic ability. If the committee feels that two students meet these criteria, the award may be divided.

Soroptomist Club Scholarship. An annual scholarship of \$200 is given to a student entering the Dental Hygiene program. The selection of the candidate is based upon financial need, quality of scholarship in high school, and aptitude as a dental hygienist.

Town and Country Lanes Scholarship. A \$200 award to an applicant who can meet all entrance requirements, and who in addition has financial need and has shown outstanding ability as a basketball player.

Triple Cities Business and Professional Women's Club Award. Established in 1954. An award of \$100 is given to one or two young women entering the College in the Medical Office Assistant or Business curriculums. Recipient is selected from the graduates of schools in the Triple Cities area.

Women's Auxiliary of the Broome County Dental Society. A fund established for a deserving student in the Dental Hygiene curriculum who might need assistance to complete studies at the College.

New York State Regents Scholarships

Recipients of New York State Regents Scholarships may use them at the College, although the Regents Scholarship for Engineering and Scientific Studies is applicable only to the Engineering Science program.

Employment and Placement

Part time work is often available throughout the academic year. Students desiring such work should consult the Student Personnel Office.

In cooperation with the department chairmen, the Student Personnel Office coordinates permanent placement, including employment listings and appointments for interviews.

After Graduation

Each graduate is entitled to two transcripts of his work completed at the College. One dollar is charged for each additional transcript.

Graduates are automatically members of the Broome Tech Alumni Association, which is a sub-division of the Faculty-Student Association, Inc. There are no annual dues, since lifetime dues are paid prior to graduation. The Alumni Association's annual events include a dinner and Alumni-Varsity basketball game in November. In addition, each association member receives copies of the Alumni Newsletter, which is published three or four times a year.

Graduates who are working in the area are urged to take advanced courses offered in the Evening Extension Division.

Veterans

All full-time curriculums are approved by the Veterans Administration. Those applicants wishing to obtain government educational benefits should consult their nearest veterans agency.



CURRICULUMS and COURSES

NUMBERING SYSTEM

All Broome Tech courses are numbered in terms of the department of the College responsible for teaching them.

0-09	Physical Education
10-99	General Education and Liberal Arts and Sciences
100-199	Mathematics-Physics
200-299	Chemical Technology
300-399	Electrical Technology
400-499	Mechanical Technology
500-599	Biological Sciences
600-699	Business
700-799	Dental Hygiene



BUSINESS

The Business Department offers courses of study in five different fields. These are in engineering secretarial work, executive secretarial work, accounting, business administration and marketing.

These programs were planned with the assistance of engineers, their secretaries, businessmen, comptrollers, auditors, sales managers, office managers and accountants.

Management training programs offered by banks, chain stores and insurance companies provide some of the best opportunities for a graduate of the Accounting, Business Administration and Marketing Management options.

Engineering Secretary

Graduates of this option can obtain immediate employment as stenographer-secretaries, technical secretaries or as private secretaries. They are in demand when industry or government needs secretarial help that can understand the specialized language of engineering. Since these students study science and engineering terminology in addition to their business skills, they are well prepared to work on engineering reports, records and correspondence.

Executive Secretary

These graduates are expected to find opportunities as secretarial assistants in the professions, as well as in government and with business firms. Students in this option may elect courses from other fields of study in the College consistent with their interests and vocational goals.

Accounting

Students taking this option receive their training in such basic areas as cost accounting, internal auditing, machine accounting and tax accounting. Graduates have successfully taken position in banks, the Internal Revenue Service, industrial firms and public accounting.

Business Administration

This option consists of a curriculum designed to enable graduates to continue their business studies at four-year colleges and universities. The program offers maximum transfer potential toward a bachelor's degree in accounting or business administration, while giving students some marketable skills.

Marketing

Students taking this option should have an interest and personality suited to a career as a salesman. Employment opportunities are generally found in sales of services, equipment, insurance, and products at the wholesale level. This program is not designed to prepare one for retail selling.

BUSINESS

Business Administration Option

		1st YEAR			Hours per Week		
Term 1 (Fall)		Class	Lab	Credits			
71	English	3	0	3			
91	Psychology	3	0	3			
107	Mathematics or	3	0	3			
150	Mathematics }						
*601	Typewriting	0	5	2			
640	Accounting	2	2	3			
658	Business Law	3	0	3			
		14	7	17			
Term 2 (Winter)							
72	English	3	0	3			
135	Science	2	2	3			
602	Typewriting	0	5	2			
611	Business Mathematics	3	0	3			
641	Accounting	2	2	3			
659	Business Law	3	0	3			
		13	9	17			
Term 3 (Spring)							
73	English	3	0	3			
94	Sociology	3	0	3			
615	Business Statistics	3	0	3			
642	Accounting	2	2	3			
652	Finance	3	0	3			
675	Business English	3	0	3			
		17	2	18			
		2nd YEAR					
Term 4 (Fall)							
45	Development of Western Civilization	3	0	3			
55	Economics	3	0	3			
620	Intermediate Accounting	2	2	3			
643	Cost Accounting	2	2	3			
670	Office Machines	2	4	4			
	Elective	3	0	3			
		15	8	19			
Term 5 (Winter)							
46	Development of Western Civilization	3	0	3			
56	Economics	3	0	3			
621	Intermediate Accounting	2	2	3			
644	Cost Accounting	2	2	3			
661	Office Management	3	0	3			
	Elective	3	0	3			
		16	4	18			
Term 6 (Spring)							
47	Development of Western Civilization	3	0	3			
57	Economics	3	0	3			
75	Effective Speaking	3	0	3			
622	Intermediate Accounting	2	2	3			
662	Office Management	3	0	3			
	Elective	3	0	3			
* or elective		17	2	18			

Note: Courses numbered in the 600's are described on pages 24-29, those numbered below 100 will be found on pages 59-63, and those in the 100 series are on pages 51-56.

BUSINESS

Accounting Option

1st YEAR

(Freshman year same as Business Administration Option on page 20)

2nd YEAR

		Hours per Week		
		Class	Lab	Credits
Term 4 (Fall)				
55	Economics	3	0	3
643	Cost Accounting	2	2	3
645	Machine Accounting	2	2	3
654	Payroll Accounting	2	2	3
670	Office Machines	2	4	4
691	Personnel Administration	3	0	3
		14	10	19
Term 5 (Winter)				
56	Economics	3	0	3
644	Cost Accounting	2	2	3
646	Machine Accounting	2	2	3
660	Federal Tax	2	2	3
661	Office Management	3	0	3
671	Office Machines	2	4	4
		14	10	19
Term 6 (Spring)				
57	Economics	3	0	3
75	Effective Speaking	3	0	3
647	Machine Accounting	2	2	3
662	Office Management	3	0	3
669	Internal Auditing	2	2	3
695	Industrial Organization and Management	3	0	3
		16	4	18

Marketing Option

1st YEAR

(Freshman year same as Business Administration Option on page 20)

2nd YEAR

		Hours per Week		
		Class	Lab	Credits
Term 4 (Fall)				
55	Economics	3	0	3
643	Cost Accounting	2	2	3
650	Salesmanship	3	0	3
664	Marketing	3	0	3
666	Credit	3	0	3
691	Personnel Administration	3	0	3
		17	2	18
Term 5 (Winter)				
56	Economics	3	0	3
75	Effective Speaking	3	0	3
651	Sales Management	3	0	3
661	Office Management	3	0	3
667	Advertising	3	0	3
670	Office Machines	2	4	4
		17	4	19
Term 6 (Spring)				
57	Economics	3	0	3
662	Office Management	3	0	3
668	Advertising	3	0	3
671	Office Machines	2	4	4
673	Market Research	3	0	3
695	Industrial Organization and Management	3	0	3
		17	4	19

Note: Courses numbered in the 600's are described on pages 24-29, and those numbered below 100 will be found on pages 59-63.

BUSINESS

Executive Secretary Option

		1st YEAR	Hours per Week		
Term 1 (Fall)		Class	Lab	Credits	
71	English	3	0	3	
91	Psychology	3	0	3	
107	Mathematics or	3	0	3	}
150	Mathematics				
*601	Typewriting	0	5	2	
604	Shorthand or	2	3	3	}
605	Shorthand				
640	Accounting	2	2	3	
		13	10	17	
Term 2 (Winter)					
72	English	3	0	3	
136	Physics	2	2	3	
602	Typewriting	0	5	2	
605	Shorthand or	2	3	3	}
606	Shorthand				
611	Business Mathematics	3	0	3	
641	Accounting	2	2	3	
		12	12	17	
Term 3 (Spring)					
73	English	3	0	3	
75	Effective Speaking or	3	0	3	}
137	Physics				
603	Typewriting	2	3	3	
616	Transcription	2	3	3	
642	Accounting	2	2	3	
675	Business English	3	0	3	
		15	8	18	
		2nd YEAR			
Term 4 (Fall)					
	Elective	3	0	3	
55	Economics	3	0	3	
617	Shorthand Dictation	2	3	3	
658	Business Law	3	0	3	
691	Personnel Administration	3	0	3	
	Elective	3	0	3	
		17	3	18	
Term 5 (Winter)					
	Elective	3	0	3	
56	Economics	3	0	3	
618	Shorthand Dictation	2	3	3	
656	Office Practice	2	4	4	
659	Business Law	3	0	3	
	Elective	3	0	3	
		16	7	19	
Term 6 (Spring)					
57	Economics	3	0	3	
94	Sociology	3	0	3	
	Elective	3	0	3	
606	Shorthand or	2	3	3	}
607	Shorthand				
657	Office Practice	2	4	4	
	Elective	3	0	3	
		16	7	19	
* or elective		16	7	19	

Note: Courses numbered in the 600's are described on pages 24-29, those numbered below 100 will be found on pages 59-63, and those in the 100 series are on pages 51-56.

BUSINESS

Engineering Secretary Option

1st YEAR

(Freshman year same as Executive Secretary Option on page 22)

2nd YEAR

		Hours per Week		
		Class	Lab	Credits
Term 4 (Fall)				
230	Chemistry	4	0	4
608	Technical Shorthand	2	3	3
645	Machine Accounting	2	2	3
654	Payroll Accounting	2	2	3
658	Business Law	3	0	3
691	Personnel Administration	3	0	3
		<u>16</u>	<u>7</u>	<u>19</u>
Term 5 (Winter)				
75	Effective Speaking	3	0	3
94	Sociology	3	0	3
414	Engineering Drawing	0	3	1
609	Technical Shorthand	2	3	3
656	Office Practice	2	4	4
659	Business Law	3	0	3
		<u>13</u>	<u>10</u>	<u>17</u>
Term 6 (Spring)				
92	Economics	3	0	3
418	Shop	1	3	2
606	Shorthand or }	2	3	3
607	Shorthand }			
657	Office Practice	2	4	4
695	Industrial Organization and Management	3	0	3
	Elective	3	0	3
		<u>14</u>	<u>10</u>	<u>18</u>

Note: Courses numbered in the 600's are described on pages 24-29, those numbered below 100 will be found on pages 59-63, those in the 400's on pages 66-70, and those in the 200 series on pages 32-34.

BUSINESS

Course Descriptions

601 Typewriting

2 Credits

5 Laboratory Hours

A beginning sequence in touch typewriting to make the operator accurate, rhythmic, and moderately rapid in the operation of the standard makes of office typewriters. Care of the machine, operation of the various parts, proper form for business letters, simple tabulation, and the building of typewriting speed are also covered.

Students will be exempt from this course, if they pass a typewriting proficiency test, given just prior to the start of the freshman fall term. Instead of this course, they must choose an elective to give them the necessary number of credit hours for graduation.

602 Typewriting

2 Credits

5 Laboratory Hours

A continuation of 601 Typewriting.

(Prerequisite: 601 Typewriting or equivalent)

603 Typewriting

3 Credits

2 Class Hours, 3 Laboratory Hours

Continuation of basic skill building, with emphasis on speed and advanced problems. Rough drafts are also covered along with technical data, such as specifications, manuscripts, legal papers.

(Prerequisite: 602 Typewriting)

604 Shorthand

3 Credits

2 Class Hours, 3 Laboratory Hours

A beginning course in the Gregg system, simplified. Basic principles and theory are taught to promote ability to read fluently from notes and plates. Dictation up to 60 words per minute.

Students will be exempt from this course, if they pass a shorthand proficiency test, given just prior to the start of the freshman fall term. Instead of this course, they will be assigned to Shorthand 605.

605 Shorthand

3 Credits

2 Class Hours, 3 Laboratory Hours

Emphasis on shorthand writing ability at sustained speeds. Dictation from 60 to 100 words per minute.

(Prerequisite: 604 Shorthand)

606 Shorthand

3 Credits

2 Class Hours, 3 Laboratory Hours

Emphasis on speed in shorthand writing; transcription at the typewriter from shorthand notes, dictated from non-previewed materials; dictation from 80 to 120 words per minute.

(Prerequisite: 605 Shorthand)

607 Shorthand

3 Credits

2 Class Hours, 3 Laboratory Hours

Specialized training at higher speeds of dictation than are usually found in office situations. Introduction of special short cuts to increase efficiency in taking dictation. Dictation of a variety of materials, including the Congressional Record. Dictation from 100 to 160 words per minute.

(Prerequisite: 606 Shorthand)

608 Technical Shorthand

3 Credits

2 Class Hours, 3 Laboratory Hours

Emphasis on increasing technical vocabulary. Dictation of technical material to be taken in shorthand and to be transcribed at the typewriter. Material taken from the fields of industry and business. Dictation at 70 to 80 words per minute.

(Prerequisite: 616 Transcription or equivalent)

609 Technical Shorthand

3 Credits

2 Class Hours, 3 Laboratory Hours

Emphasis on increasing technical vocabulary. Dictation of technical material to be taken in shorthand and to be transcribed at the typewriter. Material taken from the fields of scientific research and engineering. Dictation at 80 to 90 words per minute.

(Prerequisite: 608 Technical Shorthand or equivalent)

611 Business Mathematics

3 Credits

3 Class Hours

Review of arithmetic operations; preparation and use of short cut operations, instruction, review, and drill in percentage. Also covered are cash and trade discounts, markup, payroll, sales, property, and other taxes and simple and compound interest, bank discounts, interest, investments, and annuities.

612 Medical Shorthand

3 Credits

2 Class Hours, 3 Laboratory Hours

Introduction of medical vocabulary, medical prefixes and suffixes. Dictation of business and medical material to be taken in shorthand and transcribed on the typewriter is also stressed. The dictation range is 60 to 70 words a minute.

(Prerequisite: 605 Shorthand or equivalent)

613 Medical Shorthand

3 Credits

2 Class Hours, 3 Laboratory Hours

Emphasis on increasing medical vocabulary. Dictation of material to be taken in shorthand and to be transcribed at the typewriter. Use of medical dictionaries. Dictation at 70 to 80 words per minute.

(Prerequisite: 612 Medical Shorthand or equivalent)

614 Medical Shorthand & Transcription

3 Credits

2 Class Hours, 3 Laboratory Hours

Emphasis on increasing medical vocabulary. Dictation of material to be taken in shorthand and to be transcribed at the typewriter. Emphasis on accurate transcription at the typewriter from shorthand notes. Sustained dictations at 80 words per minute.

(Prerequisite: 613 Medical Shorthand)

615 Business Statistics

3 Credits

3 Class Hours

Concepts and mechanics of basic statistical methods applicable to problems of business and economics.

(Prerequisite: 150 Mathematics or equivalent)

616 Transcription

3 Credits

2 Class Hours, 3 Laboratory Hours

Development of skill in reading shorthand notes and producing from them a mailable manuscript on the typewriter. Punctuation and English grammar are also emphasized.

(Prerequisites: 605 Shorthand and 602 Typewriting)

617 Shorthand Dictation

3 Credits

2 Class Hours, 3 Laboratory Hours

Emphasis on increasing vocabulary. Dictation of specialized material to be taken in shorthand and transcribed at the typewriter. Material taken from the fields of law and insurance. Dictation at 70 to 80 words per minute.

(Prerequisite: 616 Transcription or equivalent)

618 Shorthand Dictation

3 Credits

2 Class Hours, 3 Laboratory Hours

Emphasis on increasing vocabulary. Dictation of specialized material to be taken in shorthand and transcribed at the typewriter. Material to be taken from fields of finance and real estate. Dictation at 80 to 90 words per minute.

(Prerequisite: 617 Shorthand)

620 Intermediate Accounting

3 Credits

2 Class Hours, 2 Laboratory Hours

Assets, liability, capital and operating accounts comprising financial statements and generally accepted accounting principles followed in the preparation of these statements. Analysis of working capital and preparation of statements of application of funds, and cash flow are also covered.

(Prerequisite: 642 Accounting)

621 Intermediate Accounting

3 Credits

2 Class Hours, 2 Laboratory Hours

Advanced study of partnership accounting, including liquidations. Corporation accounting, including preparation of consolidated statements, treasury stock, bonds, and retained earnings.

(Prerequisite: 620 Intermediate Accounting)

622 Intermediate Accounting

3 Credits

2 Class Hours, 2 Laboratory Hours

Installment sales, home office and branch accounting, financial statement analysis, special ratios, measurements and analysis of operations.

(Prerequisite: 621 Intermediate Accounting)

633 Office Practice (Medical)

3 Credits

2 Class Hours, 3 Laboratory Hours

Student gains basic training in the operation of various types of adding machines. Experience at producing mailable transcripts from dictating machines. Theory and practice of filing business records and telephone procedure are also covered.

(Prerequisite: 603 Typewriting or equivalent)

634 Office Practice (Medical)

2 Credits

1 Class Hour, 3 Laboratory Hours

The science of record keeping from the basic definition of terms, and the fundamental accounting equation through books of original entry, final entry, and the trial balance. Practical problems based on each topic are also included.

635 Office Practice (Medical)

3 Credits

2 Class Hours, 3 Laboratory Hours

Practical use of medical forms used by insurance, workmen's compensation, and welfare departments.

(Prerequisites: 633 Office Practice and 634 Accounting)

640 Accounting

3 Credits

2 Class Hours, 2 Laboratory Hours

The fundamentals of accounting from the books of original entry to the preparation of financial statements.

641 Accounting

3 Credits

2 Class Hours, 2 Laboratory Hours

Controlling accounts and special journals; accounting for specific items such as cash, accounts receivable, fixed assets.

(Prerequisite: 640 Accounting)

642 Accounting

3 Credits

2 Class Hours, 2 Laboratory Hours

Voucher system, partnerships, corporations, analysis of original statements. Students work with a practice set of books.

(Prerequisite: 641 Accounting)

643 Cost Accounting

3 Credits

2 Class Hours, 2 Laboratory Hours

The nature and purpose of cost accounting; accounting for direct labor, materials, and factory overhead, with emphasis on job order costing.

(Prerequisite: 642 Accounting)

644 Cost Accounting**3 Credits****2 Class Hours, 2 Laboratory Hours**

The study of process cost system, standard cost principles and procedures, budgets, and direct costing. Students use cost reports and records for management decision making.

(Prerequisite: 643 Cost Accounting)

645 Machine Accounting**3 Credits****2 Class Hours, 2 Laboratory Hours**

The application of unit record equipment to accounting, statistical and payroll work. Punched card systems are also covered, and there are visits to local installations.

646 Machine Accounting**3 Credits****2 Class Hours, 2 Laboratory Hours**

Programming of unit record equipment by means of wiring diagrams and control panels.

(Prerequisite: 645 Machine Accounting)

647 Machine Accounting**3 Credits****2 Class Hours, 2 Laboratory Hours**

Comprehensive laboratory projects to demonstrate the entire machine accounting cycle. Design and punching of tabulating cards, programming and write-up of project, tabulation of final reports are also covered.

(Prerequisite: 646 Machine Accounting)

650 Salesmanship**3 Credits****3 Class Hours**

The principles of sales with practical applications. Prospecting, product and service analysis, meeting objections, demonstrating, sales psychology, preparation of sales presentations are also included.

651 Sales Management**3 Credits****3 Class Hours**

Development of techniques of control in the administration of sales forces. Also incentive systems, territory planning, development of sales potentials, and personnel problems peculiar to this field.

(Prerequisite: 650 Salesmanship)

652 Finance**3 Credits****3 Class Hours**

Financial principles and procedures. Also covers detailed analyses of such factors as forms of business organization, corporate organization and problems, financial structure of business groups, financial instruments, surplus and reserves, credit and collections, reorganizations.

654 Payroll Accounting**3 Credits****2 Class Hours, 2 Laboratory Hours**

Federal legislation and practical application of accounting for social security and tax withholding from the standpoint of the employer.

(Prerequisite: 641 Accounting)

656 Office Practice**4 Credits****2 Class Hours, 4 Laboratory Hours**

A business laboratory to provide simulated experiences related to the functions and positions of the business office. Emphasis is on grooming, work attitudes, and business ethics. Techniques of telephone procedure, duplicating, switchboard operation are also covered. Use of standard secretarial office textbook is the basis of discussion and assignments.

(Prerequisite: 603 Typewriting or equivalent)

657 Office Practice**4 Credits****2 Class Hours, 4 Laboratory Hours**

Basic training in the operation of transcribing machines, principal types of adding-calculating machines, and electric typewriters. Fundamentals of filing — alphabetic, geographic, subject, numeric. Projects for advanced study and skill development are also used.

(Prerequisite: 603 Typewriting or equivalent)

658 Business Law**3 Credits****3 Class Hours**

Brief study of the federal and state judicial systems. Basic principles of contracts, involving the requisites for valid contracts, parties to the contracts, offer and acceptance, performance and discharge are also covered. Applications of contracts to agency, and the legal aspects of partnerships and corporations, and real estate law are included too.

659 Business Law**3 Credits****3 Class Hours**

Contracts as applied to sales, bailments, carriers, warehousemen. Negotiable instruments and the rights and obligations associated with them are also included.

(Prerequisite: 658 Business Law)

660 Federal Tax**3 Credits****2 Class Hours, 2 Laboratory Hours**

Determination of taxable income and selected aspects of tax accounting are emphasized. Particular attention is given to the preparation of Federal income tax returns of individuals. Preparation of partnership and corporation tax returns are also studied.

661 Office Management**3 Credits****3 Class Hours**

The science of office management, including cost control, work simplification, forms control, office services, office layout.

662 Office Management**3 Credits****3 Class Hours**

A continuation of 661 Office Management.

(Prerequisite: 661 Office Management)

664 Marketing**3 Credits****3 Class Hours**

The distributive phase of economics, from the time a product or service is produced up to the point of consumption; marketing functions; classification of goods and of markets; marketing channels and agents in each; relationship to advertising and sales promotion; salesmanship; regulations and law affecting marketing; lectures, discussions, case problems.

666 Credit**3 Credits****3 Class Hours**

Types of credit, credit department organization, credit reports and information, credit risk factors, collection procedures.

667 Advertising**3 Credits****3 Class Hours**

Development, economics, and functions of advertising; cost and application; the various media; advertising as a vocation; testing and research utilization; some work on preparation of copy and layouts; lectures, demonstrations, field trips.

668 Advertising**3 Credits****3 Class Hours**

A continuation of 667 Advertising.

(Prerequisite: 667 Advertising)

669 Internal Auditing

3 Credits

2 Class Hours, 2 Laboratory Hours

Internal auditing is an independent appraisal activity within an organization for the review of accounting, financial and other operations as a basis for service to management. It is a managerial control, which functions by measuring and evaluating the effectiveness of other controls.

(Prerequisite: 642 Accounting)

670 Office Machines

4 Credits

2 Class Hours, 4 Laboratory Hours

Training and laboratory experience in the use of office machines, using a variety of makes and types of adding, calculating, accounting, transcribing, dictating, and duplicating machines and electric typewriters. Also fundamentals of filing theory and systems.

(Prerequisite: 602 Typewriting)

671 Office Machines

4 Credits

2 Class Hours, 4 Laboratory Hours

A continuation of 670 Office Machines.

(Prerequisite: 670 Office Machines)

673 Market Research

3 Credits

3 Class Hours

Methods of collecting and interpreting marketing information. Specific applications to problems in market development, market potential, and sales management are included.

(Prerequisites: 664 Marketing and 615 Business Statistics)

675 Business English

3 Credits

3 Class Hours

Composition and dictation of business correspondence. Also preparation of reports, articles, planning and presentation of speeches.

(Prerequisite: 71 English)

690 Construction Law

3 Credits

3 Class Hours

Brief study of the federal and state judicial systems. Legal aspects concerning the creation of partnerships and corporations. Principles of business law applicable to the construction industry. Fundamentals of business and union contracts, insurance, mechanics' liens, labor-management relations, boundary line rights and obligations, statutes and ordinances, monetary damages, injunction and mandamus, professional registration.

691 Personnel Administration

3 Credits

3 Class Hours

Techniques and methods used to achieve utilization of manpower in business through proper selection, placement, training, job evaluation, wage setting, and employee relations.

695 Industrial Organization and Management

3 Credits

3 Class Hours

Introduction to the major functions or departments of industry, their interrelationships, and how they are brought together through organization. Methods, cost, production control, product development, finance, physical facilities, quality control, plant engineering, industrial relations, job evaluation, sales, advertising, budgets, records are also covered.

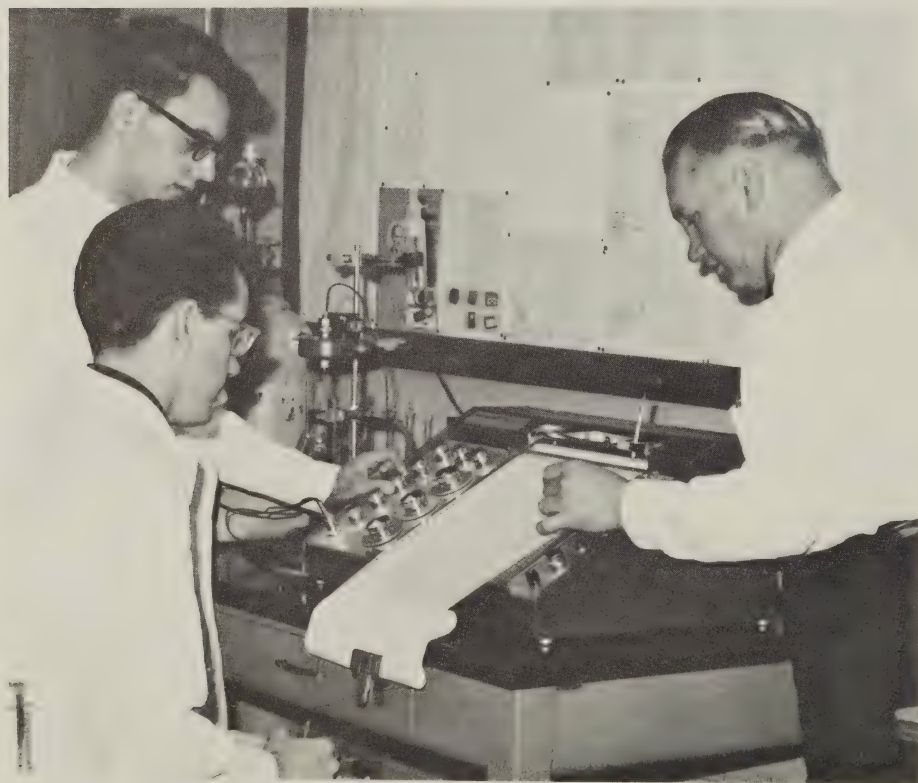
CHEMICAL TECHNOLOGY

Fortune Magazine has predicted that this will be known as "The Chemical Century," and the DuPont Corporation has adopted the slogan, "Better Things for Better Living Through Chemistry." In recent years chemical processes have been creating new materials at such a rapid pace that this industry now accounts for about one-fifth of the gross national product.

But there is a serious problem facing the chemical industry. It is a shortage of trained technical personnel. *Chemical Engineering*, a trade journal, reports: "The industry enters a new era in which the shortage of technical men will be a major controlling factor — if not limiting factor — in any future expansion plans."

Among the workers needed are technicians who are capable of filling responsible positions in research, development and testing laboratories, in pilot plants and production. The Chemical Technology program at Broome Tech is designed to prepare ambitious and reliable young men and women as engineering technicians in this fast-growing industry.

The Chemical Technology curriculum is accredited by the Engineers Council for Professional Development.



A professor shows students in the Chemistry laboratory how to use the Sargent Model XV Polarograph to analyze metal ions and organic compounds.

CHEMICAL TECHNOLOGY

1st YEAR

		Hours per Week		
		Class	Lab	Credits
Term 1 (Fall)				
71	English	3	0	3
101	College Algebra and Trigonometry	4	0	4
127	Physics	3	2	4
224	Chemistry	3	3	4
416	Engineering Drawing	0	6	2
		13	11	17
Term 2 (Winter)				
72	English	3	0	3
92	Economics	3	0	3
102	Analytic Geometry and Calculus	3	0	3
128	Physics	3	2	4
225	Chemistry	3	3	4
		15	5	17
Term 3 (Spring)				
73	English	3	0	3
103	Analytic Geometry and Calculus	3	0	3
129	Physics	3	2	4
242	Chemistry	3	0	3
243	Qualitative Chemistry	3	4	5
		15	6	18

2nd YEAR

Term 4 (Fall)				
104	Analytic Geometry and Calculus } or Elective	3	0	3
244	Quantitative Chemistry	4	9	7
250	Organic Chemistry	3	6	5
255	Chemical Engineering Stoichiometry	3	0	3
		13	15	18
Term 5 (Winter)				
91	Psychology	3	0	3
105	Analytic Geometry and Calculus } or Elective	3	0	3
245	Quantitative Chemistry	3	6	5
251	Organic Chemistry	3	6	5
256	Chemical Engineering Unit Operations I	3	3	4
		15	15	20
Term 6 (Spring)				
94	Sociology	3	0	3
246	Quantitative Chemistry	3	6	5
252	Organic Chemistry	3	6	5
257	Chemical Engineering Unit Operations II	3	6	5
		12	18	18

Note: Courses numbered in the 200's are described starting on the next page. Description of courses numbered below 100 are on pages 59-63, those in the 100 series on pages 51-56, those in the 400's on pages 66-70.

CHEMICAL TECHNOLOGY

Course Descriptions

212 Chemistry 4 Credits

3 Class Hours, 2 Laboratory Hours

Basic laws, principles, and theories of chemistry. Also structure of matter, periodicity, chemical action, states of matter, and solutions.

213 Chemistry 4 Credits

3 Class Hours, 2 Laboratory Hours

A continuation of Chemistry 212, covering acids, bases and salts. Ionization, selected elements, and topics in organic chemistry are also covered.

(Prerequisite: 212 Chemistry)

224 Chemistry 4 Credits

3 Class Hours, 3 Laboratory Hours

Fundamental principles and laws underlying chemical action, their integration with the theories of atomic structure and chemical bonding, and correlation with the position of the elements on the periodic chart. Topics discussed are atomic structure, the periodic chart, chemical bonding, water, and the states of matter.

225 Chemistry 4 Credits

3 Class Hours, 3 Laboratory Hours

A continuation of Chemistry 224, covering solutions, oxidation-reduction, ionization and electrolysis, acids, bases, salts, chemical equilibrium, and coordination compounds.

(Prerequisite: 224 Chemistry)

226 Chemistry 4 Credits

3 Class Hours, 3 Laboratory Hours

A continuation of Chemistry 225 including qualitative analysis.

(Prerequisite: 225 Chemistry)

230 Chemistry 4 Credits

4 Class Hours

A basic course in chemistry designed for non-technical students who require knowledge of chemical principles, applications, and terminology.

232 Chemistry 4 Credits

3 Class Hours, 3 Laboratory Hours

The fundamental concepts of inorganic chemistry, including composition of substances, kinetic and molecular theories, atom structure and bonding, solutions and colloids, ions in solution, and nucleonics.

233 Chemistry 4 Credits

3 Class Hours, 3 Laboratory Hours

Fundamental concepts of organic chemistry, including carbohydrates, lipids, and proteins, and their role in metabolism.

(Prerequisite: 232 Chemistry or 224 Chemistry)

242 Chemistry

3 Credits

3 Class Hours

An introductory course designed to prepare the student for the mathematical operations encountered in more advanced chemistry courses.

(Prerequisite: 225 Chemistry)

243 Qualitative Chemistry

5 Credits

3 Class Hours, 4 Laboratory Hours

A theoretical discussion of ionization constants, solubility products, and equilibrium constants as influencing qualitative analysis. Laboratory work includes the detection and identification of the more important cations and anions, as well as work on the analysis of mixtures. Emphasis on various tests, such as flame coloration, blowpipe, bead, open and closed tube, solubility, and confirmation. The hand spectroscope and light microscope are used for analytical purposes.

244 Quantitative Chemistry

7 Credits

4 Class Hours, 9 Laboratory Hours

The application of physical and chemical theory to the more important gravimetric and volumetric procedures. The analytical balance, errors, precision, significant figures, and preparation of samples for analysis. Laboratory work in the application of various methods of quantitative analysis including gravimetry, neutralimetry, precipitometry, redoximetry, and compleximetry.

(Prerequisites: 242 Chemistry and 243 Qualitative Chemistry)

245 Quantitative Chemistry

5 Credits

3 Class Hours, 6 Laboratory Hours

Instrumental methods of analytical chemistry, primarily electrochemical methods. Laboratory experiments in potentiometry, polarography, coulometry, conductimetry, electrodeposition, and radiochemistry.

(Prerequisite: 244 Quantitative Chemistry)

246 Instrumental Methods of Analysis

5 Credits

3 Class Hours, 6 Laboratory Hours

Instrumental methods of analytical chemistry, primarily optical methods. Laboratory experiments in visible, ultra-violet, and infra-red spectrophotometry, in flame photometry, in chemical microscopy, and in gas, column, and paper chromatography.

(Prerequisite: 245 Quantitative Chemistry)

250 Organic Chemistry

5 Credits

3 Class Hours, 6 Laboratory Hours

The important classes of carbon compounds, such as aliphatic and aromatic hydrocarbons, alcohols, alkyl and aryl halides, ethers, and carboxylic acids, in terms of modern electronic and resonance theories.

(Prerequisite: 243 Qualitative Chemistry or 226 Chemistry)

251 Organic Chemistry

5 Credits

3 Class Hours, 6 Laboratory Hours

A continuation of the study of functional groups of organic compounds, followed by a study of tautomerism, stereochemistry, carbohydrates, dyes, proteins, and polymers, in terms of modern electronic and resonance theories.

(Prerequisite: 250 Organic Chemistry)

252 Organic Chemistry

5 Credits

3 Class Hours, 6 Laboratory Hours

The identification of organic compounds by correlation of fundamental properties, and the behavior of organic compounds with their structures. Functional group determination is made by a study of physical constants, analysis of the elements, solubility tests, class reactions, and derivative preparation.

(Prerequisite: 251 Organic Chemistry)

255 Chemical Engineering Stoichiometry

3 Credits

3 Class Hours

The application of chemistry, physics, and mathematics to the solution of chemical engineering problems. Special emphasis is placed on the solution of problems dealing with material and energy balances.

(Prerequisites: 242 Chemistry and Math 101 College Algebra and Trigonometry)

256 Chemical Engineering Unit Operations I

4 Credits

3 Class Hours, 3 Laboratory Hours

A theoretical treatment of the basic unit operations of chemical engineering, including fluid flow, heat transfer, evaporation, distillation, drying, gas absorption, and filtration. Laboratory experimentation is conducted, using pilot plant size equipment, and formal reports utilizing the students' data are required.

(Prerequisite: 255 Chemical Engineering Stoichiometry)

257 Chemical Engineering Unit Operations II

5 Credits

3 Class Hours, 6 Laboratory Hours

A continuation of 256 Chemical Engineering Unit Operations I.

(Prerequisite: 256 Chemical Engineering Unit Operations I)

258 Chemical Engineering Stoichiometry

3 Credits

3 Class Hours

A continuation of 255 Chemical Engineering Stoichiometry. The course involves the solution of more elaborate material and energy problems.

(Prerequisite: 255 Chemical Engineering Stoichiometry)

259 Survey of Transfer Operation

4 Credits

3 Class Hours, 3 Laboratory Hours

A discussion of the basic mechanisms of heat, mass, and momentum transfer, as applied to Chemical Engineering. Laboratory work involves demonstration and measurement of the above phenomena.

(Prerequisite: 258 Chemical Engineering Stoichiometry)

CIVIL TECHNOLOGY

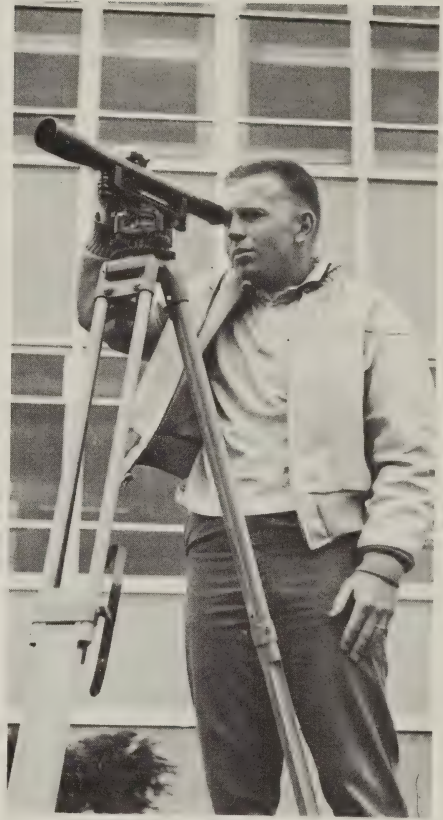
The construction industry, considering all related goods and services such as manufacturing and transportation, is the largest industry in the country. The unparalleled activity in construction has pointed up a severe shortage of technical personnel in this field.

This shortage has been made more acute by activation of new multibillion dollar state and federal highway programs, by the erection of new educational and industrial plants, and by the continued expansion in home building. Civil Technology has been designed to help alleviate this shortage.

The Civil and Mechanical curriculums are identical for the first term. This will permit a student in this department to attend college for one full term before it becomes necessary to make his final selection.

Graduates of this program are engineering technicians and are qualified to work as assistants to professional and supervisory persons such as engineers, architects, construction superintendents, surveyors and contractors.

Many openings exist in the federal, state and local governments. Other fields which attract graduates are sales of building materials and construction equipment, purchasing, testing of construction materials, drafting, estimating, specification writing, and inspection.



Civil Technology student sighting through a surveyor's level.

CIVIL TECHNOLOGY

1st YEAR

		Hours per Week		
		Class	Lab	Credits
Term 1 (Fall)				
71	English	3	0	3
101	College Algebra and Trigonometry	4	0	4
141	Physics	3	2	4
212	Chemistry	3	2	4
400	Manufacturing Processes	2	2	3
430	Engineering Drawing	0	3	1
490	Orientation	1	0	0
		16	9	19
Term 2 (Winter)				
72	English	3	0	3
102	Analytic Geometry and Calculus	3	0	3
142	Physics	3	2	4
213	Chemistry	3	2	4
438	Descriptive Geometry	1	2	2
440	Applied Mechanics	3	0	3
		16	6	19
Term 3 (Spring)				
73	English	3	0	3
103	Analytic Geometry and Calculus	3	0	3
143	Physics	3	2	4
424	Strength of Materials	3	3	4
436	Architectural Drawing	0	3	1
476	Surveying	3	6	5
		15	14	20

2nd YEAR

Term 4 (Fall)				
91	Psychology	3	0	3
104	Analytic Geometry and Calculus or	}	0	3
485	Construction Planning			
382	Electricity	3	2	4
437	Architectural Drawing	0	3	1
443	Strength of Materials	3	3	4
477	Surveying	2	6	4
		14	14	19
Term 5 (Winter)				
92	Economics	3	0	3
105	Analytic Geometry and Calculus or	}	0	3
426	Fluid Mechanics			
439	Architectural Drawing	0	3	1
470	Reinforced Concrete Design	3	3	4
483	Route Surveying and Highway Design	3	3	4
690	Construction Law	3	0	3
		15	9	18
Term 6 (Spring)				
94	Sociology	3	0	3
106	Analytic Geometry and Calculus or	}	0	3
427	Heating, Ventilating and Air Conditioning			
471	Structural Steel Design	3	3	4
472	Building Design	3	6	5
487	Soil Mechanics	3	3	4
		15	12	19

Note: Courses numbered in the 400's are described on pages 66-70. Descriptions of those courses numbered below 100 will be found on pages 59-63, those numbered in the 100's are on pages 51-56, those in the 200 series on pages 32-34, those in the 300 sequence on pages 44-47, and those in the 600's on pages 24-29.

DENTAL HYGIENE

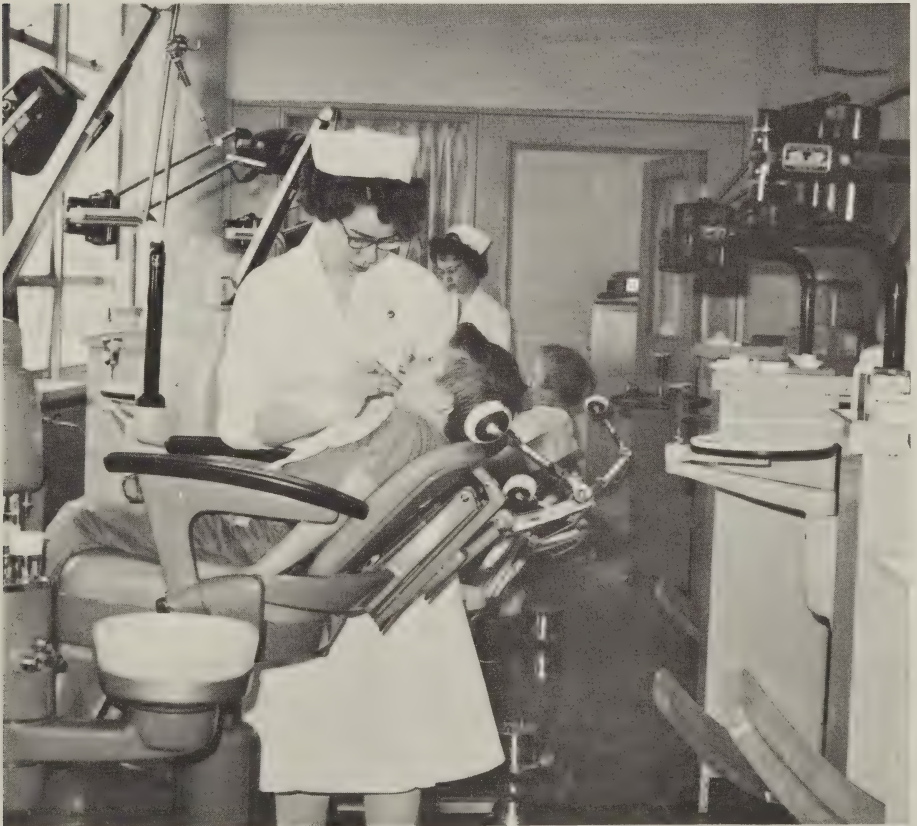
The Dental Hygiene curriculum offers women a fine opportunity for a career, because of the current demand for dental hygienists.

The laboratory is equipped with modern equipment. The students learn to clean teeth, to take and develop X-rays, and to work with dentists in treating patients.

In addition to working in a dentist's office, graduates of this program can go into public health, industry, or teaching. They can also work in a school system, cleaning students' teeth. They can enter research and testing programs.

Graduates are prepared to take the New York State Licensing examination, which is required for practice. The curriculum is accredited by the Council on Dental Education of the American Dental Association.

Broome Technical Community College has an arrangement with the State University College at Cortland whereby graduates may continue their education at Cortland. This further education may lead to a Bachelor of Science degree in Health Education and a permanent New York State teaching certificate in dental hygiene.



Dental Hygiene student cleaning a youngster's teeth in the clinic.

DENTAL HYGIENE

1st YEAR

	Class	Hours per Week	
		Lab	Credits
Term 1 (Fall)			
09 First Aid	1	0	1
71 English	3	0	3
232 Chemistry	3	3	4
573 Anatomy and Physiology	2	2	3
*601 Typewriting	0	5	2
740 Dental Anatomy	2	2	3
755 Dental Hygiene and Ethics	2	0	2
	<u>13</u>	<u>12</u>	<u>18</u>
Term 2 (Winter)			
72 English	3	0	3
233 Chemistry	3	3	4
574 Anatomy and Physiology	2	2	3
575 Histology and Embryology	2	2	3
700 Dental Manikin Practice	1	4	3
741 Dental Anatomy	2	2	3
	<u>13</u>	<u>13</u>	<u>19</u>
Term 3 (Spring)			
73 English	3	0	3
559 Microbiology	2	4	4
701 Dental Manikin Practice	1	4	3
721 Hygiene	2	0	2
753 Radiology	3	0	3
758 Dental Office Practice	3	2	4
	<u>14</u>	<u>10</u>	<u>19</u>

2nd YEAR

Term 4 (Fall)			
91 Psychology	3	0	3
585 Pharmacology	3	0	3
704 Clinical Dental Hygiene	0	12	4
744 Preventive Dentistry	4	0	4
754 General Pathology	2	0	2
783 Dental Health Education	2	2	3
	<u>14</u>	<u>14</u>	<u>19</u>
Term 5 (Winter)			
587 Public Health	2	0	2
705 Clinical Dental Hygiene	0	12	4
760 Dental Lab Practice	2	2	3
761 Nutrition	3	0	3
766 Oral Pathology	2	0	2
767 Anesthesia	2	0	2
785 Health Services in Schools	3	0	3
	<u>14</u>	<u>14</u>	<u>19</u>
Term 6 (Spring)			
75 Effective Speaking	3	0	3
92 Economics	3	0	3
94 Sociology	3	0	3
706 Clinical Dental Hygiene	0	12	4
764 School Organization	3	0	3
768 Special Dental Practice	2	2	3
* or elective	<u>14</u>	<u>14</u>	<u>19</u>

Note: Courses numbered in the 700's are described on pages 39-41. Descriptions of those courses numbered below 100 are on pages 59-63, those in the 200's on pages 32-34, those in the 500 series on pages 73-76, and those in the 600 sequence on pages 24-29.

DENTAL HYGIENE

Course Descriptions

700 Dental Manikin Practice 3 Credits

1 Class Hour, 4 Laboratory Hours

Removal of simulated deposits and accretions on the teeth of manikins after study of instrumentation and polishing techniques, toothbrushing and general mouth cleanliness.

(Prerequisite: 740 Dental Anatomy)

701 Dental Manikin Practice 3 Credits

1 Class Hour, 4 Laboratory Hours

A continuation of 700 Dental Manikin Practice.

(Prerequisite: 741 Dental Anatomy)

704 Clinical Dental Hygiene 4 Credits

12 Laboratory Hours

Dental prophylaxes performed on patients, mouth inspection, topical application of fluorides, home care instruction to the patient. Practice in dental assisting, sterilizing techniques; taking, processing, and mounting radiographs; classroom instruction in dental health education to elementary and secondary school students.

(Prerequisites: 701 Dental Manikin Practice and 574 Gross Anatomy and Physiology)

705 Clinical Dental Hygiene 4 Credits

12 Laboratory Hours

A continuation of 704 Clinical Dental Hygiene.

(Prerequisite: 704 Clinical Dental Hygiene)

706 Clinical Dental Hygiene 4 Credits

12 Laboratory Hours

A continuation of 705 Clinical Dental Hygiene.

(Prerequisite: 705 Clinical Dental Hygiene)

721 Hygiene 2 Credits

2 Class Hours

The various factors (physical, social, psychological) which affect the total health status of the individual, and the effective application of sound health principles in solving health problems.

740 Dental Anatomy 3 Credits

2 Class Hours, 2 Laboratory Hours

Nomenclature and growth and development of the deciduous and permanent teeth and surrounding tissues of the oral cavity. Also drawing and carving of the teeth.

741 Dental Anatomy 3 Credits

2 Class Hours, 2 Laboratory Hours

A continuation of 740 Dental Anatomy.

(Prerequisite: 740 Dental Anatomy)

744 Preventive Dentistry

4 Credits

4 Class Hours

Preventive methods for maintaining the health of the mouth and control of dental caries. Detailed studies of the latest methods of caries control through laboratory tests, diet and fluoridation. Study of teeth not in normal occlusion, classification and probable factors causing orthodontic conditions. Introduction to abnormal oral conditions found in children, with possible methods of treatment or correction.

(Prerequisite: 575 Histology and Embryology)

753 Radiology

3 Credits

3 Class Hours

Proper use of dental X-ray equipment; exposure, development and mounting of dental films.

Prerequisites: 700 Dental Manikin Practice and 741 Dental Anatomy)

754 General Pathology

2 Credits

2 Class Hours

A broad picture of the disease process through a study of common general diseases, their causes and results. Also explanation of treatment. Emphasis is on the principles of inflammation, healing and repair.

(Prerequisites: 559 Microbiology, 575 Histology and Embryology and 574 Gross Anatomy and Physiology)

755 Dental Hygiene and Ethics

2 Credits

2 Class Hours

History of dental hygiene; ethical practice, proper oral hygiene technique.

758 Dental Office Practice

3 Credits

2 Class Hours, 2 Laboratory Hours

Preparation for practical office assistance covering all phases of the functioning of a dental office. These include personality training, reception of patients, use of telephone, typing, care of dental equipment and instruments, inventory and ordering of supplies, recall system, billing, filing.

(Prerequisite: 601 Typewriting)

760 Dental Laboratory Practice

3 Credits

2 Class Hours, 2 Laboratory Hours

An introduction to the restorative phase of dentistry. Students are taught, through laboratory projects, demonstrations and lectures, the procedures used in making dentures, bridges and similar dental appliances. They are also taught the history, property and uses of various dental laboratory materials.

761 Nutrition

3 Credits

3 Class Hours

Principles of nutrition, the roles and sources of the various food groups, the variables that influence nutritional needs.

(Prerequisites: 233 Chemistry and 574 Gross Anatomy and Physiology)

764 School Organization**3 Credits****3 Class Hours**

The organization, administration, finance, personnel policies, laws and regulations of the school program in New York State.

766 Oral Pathology**2 Credits****2 Class Hours**

An extension of the course in General Pathology presenting oral diseases, their causes, recognition and treatment, with particular emphasis on the application of principles covered in General Pathology.

(Prerequisite: 754 General Pathology)

767 Anesthesia**2 Credits****2 Class Hours**

The principles of general and local anesthetics and patient management.

768 Special Dental Practices**3 Credits****2 Class Hours, 2 Laboratory Hours**

Various specialty practices in dentistry — periodontia, prosthetics, orthodontics, endodontics, exodontics, oral surgery and maxio-facial surgery. Also presentation of the nature, procedure, differences in types of practices, and the role of the dental hygienist in each practice.

783 Dental Health Education**3 Credits****2 Class Hours, 2 Laboratory Hours**

Preventive dentistry and methods of instructing school children and lay groups in dental health. Study and preparation of teaching aids and source materials for dental health education.

785 Health Services in Schools**3 Credits****3 Class Hours**

The place and function of health services in public education; laws and regulations which apply to health services in schools; factors which influence the health status of the child in the school environment; the coordination of school and community health services.

ELECTRICAL TECHNOLOGY

Few people are unaware what an important part electricity plays in our daily lives, in conveniences like radio, television, lighting and innumerable kitchen appliances.

But electricity is also one of the cornerstones upon which space exploration and our national defense are built. The amazing development of radar, electronics and solid state hardware is based on electricity.

The recent rapid advances in electronics and related electrical fields has created a tremendous need for engineers, engineering technicians and specialists to meet the needs of national defense and the scientific economy and life of the future.

Two-year technical colleges, like Broome Tech, have become increasingly important in preparing better trained men for work in the electrical field. These colleges train men and women to do highly specialized technical work in half the time of a four-year college. Although few realize it, there is an excellent place for women in the electrical field.

Job opportunities are in such areas as electrical design drafting, technical sales, electronic computers, sonar and guided missiles. Also in power generation and distribution, communications and the design and evaluation of electrical equipment.

Some of the companies that have hired Broome Tech Electrical Technology graduates in recent years are General Electric, Westinghouse, IBM, Bell Telephone, the Argonne Laboratories of the University of Chicago and New York State Electric and Gas Corp.

This curriculum is accredited by the Engineers' Council for Professional Development (ECPD).



There are excellent opportunities for women in the Electrical Technology field, and here one of the young ladies in the program regulates an oscilloscope during an experiment.

ELECTRICAL TECHNOLOGY

1st YEAR

		Hours per Week		
Term 1 (Fall)		Class	Lab	Credits
71	English	3	0	3
303	Industrial Safety and First Aid	2	0	2
101	College Algebra and Trigonometry	4	0	4
300	Manufacturing Processes	1	3	2
323	Physics (Fundamentals for Electricity)	4	3	5
330	Engineering Drawing	0	3	1
		14	9	17
Term 2 (Winter)				
72	English	3	0	3
102	Analytic Geometry and Calculus	3	0	3
301	Electrical Construction and Maintenance	1	3	2
328	Physics (Electricity and Magnetism)	4	3	5
329	Semiconductor Fundamentals	4	0	4
331	Engineering Drawing	0	3	1
		15	9	18
Term 3 (Spring)				
73	English	3	0	3
103	Analytic Geometry and Calculus	3	0	3
302	Electrical Construction and Maintenance	0	3	1
332	Engineering Drawing	0	3	1
340	Electrical Circuits	4	3	5
348	Electronics	4	3	5
		14	12	18

2nd YEAR

Term 4 (Fall)				
	Technical Elective or Mathematics	3	0	3
92	Economics	3	0	3
333	Electrical Design	0	3	1
345	Electrical Machines	4	3	5
349	Electronics	4	3	5
368	Network Analysis	4	0	4
		18	9	21
Term 5 (Winter)				
	Technical Elective or Mathematics	3	0	3
91	Psychology	3	0	3
334	Electrical Design	0	3	1
346	Electrical Machines	4	3	5
350	Electronics	4	3	5
393	Organization and Management	3	0	3
		17	9	20
Term 6 (Spring)				
94	Sociology	3	0	3
335	Electrical Design	0	3	1
351	Electronics	4	3	5
354	Automatic Controls	4	3	5
394	Industrial Relations	3	0	3
		14	9	17

Note: Courses numbered in the 300's are described on pages 44-47, those numbered below 100 will be found on pages 59-63, and those in the 100 series on pages 51-56.

ELECTRICAL TECHNOLOGY

Course Descriptions

300 Manufacturing Processes 2 Credits

1 Class Hour, 3 Laboratory Hours

This course teaches manufacturing processes that are related to the electrical industry. Its purpose is to provide a basic knowledge of bench operations and tool operations involving the use of such equipment as the lathe, drill press, vertical end mill, band saw, engraving machine, and power hack saw. Practice and study of oxyacetylene and arc welding are also covered.

301 Electrical Construction and Maintenance 2 Credits

1 Class Hour, 3 Laboratory Hours

General trade practices are covered in this course to promote the acquisition of basic manipulative skills. The work studied includes installation and maintenance of electrical equipment, different types of wiring systems used in industry and homes, trouble-shooting and repair of electrical equipment. Students will also study and practice fabrication methods used in the electrical industry, the National Electrical Code rules, and shop safety practices.

302 Electrical Construction and Maintenance 1 Credit

3 Laboratory Hours

Continuation of Electrical Construction and Maintenance 301.

303 Industrial Safety and First Aid 2 Credits

2 Class Hours

This course covers accident causes, reports and records. It also analyzes the many facets of safety — as a responsibility of workers and management — as well as job safety and education, training, supervision and organization for safety. Also principles of first aid.

323 Physics (Fundamentals for Electricity) 5 Credits

4 Class Hours, 3 Laboratory Hours

This course establishes a foundation for the study of electrical principles by covering the dimensional, vector and graphic analysis of basic physical concepts.

328 Physics (Electricity and Magnetism) 5 Credits

4 Class Hours, 3 Laboratory Hours

Parameters and components of electrical circuits based upon electric and magnetic field concepts.

(Prerequisite: 323 Physics)

329 Semiconductor Fundamentals 4 Credits

4 Class Hours

Investigation of electrical phenomena within solids, based upon extra-nuclear atomic structure and concepts of solid state physics.

(Prerequisite: 323 Physics)

330 Engineering Drawing 1 Credit

3 Laboratory Hours

This course covers the techniques of geometric construction, principles of orthographic projections, sections, and theory and application of dimensioning and tolerancing. Also lettering practice and the development of technical sketching.

331 Engineering Drawing

1 Credit

3 Laboratory Hours

Shop processes are discussed along with procedures to facilitate the understanding of drafting problems. Types of threads, bolts, nuts, keys, keyways and locking devices are also covered. So are the preparation of assembly drawings, the applications of auxiliary views and axonometric projection, and the methods of reproducing drawings.

(Prerequisite: 330 Engineering Drawing)

332 Engineering Drawing

1 Credit

3 Laboratory Hours

Solutions of mathematical problems using graphic methods. Development of scale layout and construction of various common forms of nomographs. Geometric derivations of various types of mathematical relationships.

(Prerequisite: 331 Engineering Drawing)

333 Electrical Design

1 Credit

3 Laboratory Hours

Electrical drafting principles are applied to the planning of power layout and lighting design in this course. Manufacturers' catalogs, charts and the National Electrical Code form essential reference material. Materials lists and schedules are prepared as part of each project.

(Prerequisite: 332 Engineering Drawing)

334 Electrical Design

1 Credit

3 Laboratory Hours

Electrical drafting in the field of electronics. A study of symbols, conventions, layout procedures and circuit sequence of an electronic circuit. Individual student projects are an important part of this course.

(Prerequisite: 333 Electrical Design)

335 Electrical Design

1 Credit

3 Laboratory Hours

Circuit symbols and types of diagrams used in control mechanisms. Discussions of the principles, construction and operation of control devices. Individual student projects are an important part of this course.

(Prerequisite: 334 Electrical Design)

340 Electrical Circuits

5 Credits

4 Class Hours, 3 Laboratory Hours

Application of circuit parameters to single and polyphase circuits, involving the use of vector algebra and elementary circuit laws.

(Prerequisite: 328 Physics)

345 Electrical Machines

5 Credits

4 Class Hours, 3 Laboratory Hours

Theory, operation and application of DC machinery. Introduction to single and polyphase transformers, stressing their design, characteristics and applications. Vector diagrams are used. Laboratory experience is related to the class work.

(Prerequisite: 340 Electrical Circuits)

346 Electrical Machines

5 Credits

4 Class Hours, 3 Laboratory Hours

Design, construction, characteristics and applications of transformers, connectors, alternators and synchronous and induction motors. Laboratory work deals with several methods of evaluation. Special methods of predicting characteristics, including vector and circle diagram methods, are also included.

(Prerequisite: 345 Electrical Machines)

348 Electronics

5 Credits

4 Class Hours, 3 Laboratory Hours

Introduction to electronic building blocks. Characteristics of vacuum, gas, and semi-conductor devices are studied, along with multi-element and special types of active devices.

(Prerequisites: 102 Mathematics, 328 Physics and 329 Physics)

349 Electronics

5 Credits

4 Class Hours, 3 Laboratory Hours

Use of electronic building blocks; vacuum, gas, and semi-conductor devices in functioning circuitry. Prediction and analysis of performance are also covered.

(Prerequisite: 348 Electronics)

350 Electronics

5 Credits

4 Class Hours, 3 Laboratory Hours

This course covers the behavior of large signal devices, graphic analysis, applications of feedback, and sinusoidal oscillators.

(Prerequisites: 103 Mathematics and 349 Electronics)

351 Electronics

5 Credits

4 Class Hours, 3 Laboratory Hours

This course covers cascaded-circuits, behavior and applications of non-linear circuits, circuits with heavy feedback, wave-shaping, non-sinusoidal oscillators, counters and functional devices.

(Prerequisite: 350 Electronics)

354 Automatic Controls

5 Credits

4 Class Hours, 3 Laboratory Hours

Theory, operation and application of industrial equipment used in the automatic control of industrial motors and generators. The course also deals with the examination, operation and trouble-shooting of these control devices and with the introduction to the principles of servo-mechanisms.

(Prerequisite: 346 Electrical Machines)

368 Network Analysis

4 Credits

4 Class Hours

Analysis of complex electrical networks by the application of Kirchhoff's laws, Thevenin's theorem, Norton's theorem, superposition and vector loci methods.

(Prerequisite: 340 Electrical Circuits)

371 Electrical Circuits

4 Credits

3 Class Hours, 3 Laboratory Hours

Basic principles of electrical circuits. The work covers Kirchhoff's laws, AC networks, network theorems and sine wave voltage. Also included are current relationships using vector representation, resonance, loci analysis and transients. Laboratory work consists of verification of network laws and theorems.

(Prerequisite: 123 Physics)

372 Electrical Circuits

4 Credits

3 Class Hours, 3 Laboratory Hours

Study of linear systems, lumped element electrical systems, equivalent circuits, analogous and polyphase systems (balanced and unbalanced).

(Prerequisite: 371 Electrical Circuits)

377 Electricity

4 Credits

3 Class Hours, 3 Laboratory Hours

The beginning of a two-term sequential course of applied electrical concepts. The emphasis is on DC and AC circuitry and an introduction to electrical machinery. Related laboratory experiments are included.

(Prerequisite: 143 Physics)

378 Electricity

4 Credits

3 Class Hours, 3 Laboratory Hours

A continuation of 377 Electricity.

(Prerequisite: 377 Electricity)

379 Electronics

4 Credits

3 Class Hours, 3 Laboratory Hours

This is an applied electronics course with related laboratory experiments. It introduces students to the theory and operation of electronic components, with emphasis on their applications.

(Prerequisite: 378 Electricity)

382 Electricity

4 Credits

3 Class Hours, 3 Laboratory Hours

A single applied electrical course with related laboratory experiments. DC and AC circuitry is emphasized as well as measurements of electrical properties. An introduction to electrical machinery is also included.

(Prerequisite: 143 Physics)

393 Industrial Organization

3 Credits

3 Class Hours

Principles, functions and coordination of industrial organization. The course covers management, costs, product development, marketing, methods analysis, work measurement, plant layout, material handling, production and inventory control.

394 Industrial Relations

3 Credits

3 Class Hours

Analysis and study of the principles, concepts and techniques of industrial relations. Emphasis is placed on the personnel functions as an important area within the field of industrial relations. Students will receive guidance and counsel in finding and selecting suitable employment as well as long range vocational goals in Electrical Technology.

(Prerequisite: 393 Industrial Organization)

ENGINEERING SCIENCE

Although the level of work covered in the Engineering Science curriculum is primarily designed to prepare graduates to continue their studies in the engineering field in four-year colleges and universities, there are employment opportunities for qualified graduates.

The emphasis in this program is on mathematics and physics, so that graduates can transfer to four-year schools into the junior year in such fields as physics, engineering and mathematics.

Students have transferred in the last two years to such colleges and universities as Rensselaer Polytechnic Institute, Syracuse and Clarkson.

Some of the job opportunities for those who prefer to seek immediate employment lie in the engineering technician field in such areas as assistants to engineers in research and development, and positions involving the application of mathematics.

In order for a high school graduate to qualify for admission to the Engineering Science curriculum, he or she must have shown high academic potential on the admission tests, and demonstrated superior ability in science and mathematics in high school.

Students entering Broome Technical Community College who wish to continue studying for their engineering degrees will find this the most appropriate course of study.



A professor of the Engineering Science Department works the crane that raises and lowers radioactive material from and to its underground storage place in the nuclear physics laboratory.

ENGINEERING SCIENCE

1st YEAR

	Class	Hours per Week		Credits
		Lab		
Term 1 (Fall)				
30 English Composition	3	0		3
110 Calculus	4	0		4
120 Physics	3	3		4
224 Chemistry	3	3		4
417 Engineering Drawing	0	6		2
	13	12		17
Term 2 (Winter)				
31 English Composition	3	0		3
111 Calculus	4	0		4
121 Physics	3	3		4
225 Chemistry	3	3		4
438 Descriptive Geometry	1	2		2
	14	8		17
Term 3 (Spring)				
32 English Composition	3	0		3
112 Calculus	4	0		4
122 Physics	3	3		4
226 Chemistry	3	3		4
465 Statics	4	0		4
	17	6		19

2nd YEAR

Term 4 (Fall)				
55 Economics	3	0		3
113 Calculus	3	0		3
123 Physics	3	3		4
466 Dynamics	4	0		4
446 Metallurgy or }	3	3		4
478 Surveying }	2	6		4
	16	6		18
	or 15	9		18
Term 5 (Winter)				
56 Economics	3	0		3
114 Differential Equations	3	0		3
124 Physics	3	3		4
371 Electrical Circuits	3	3		4
453 Strength of Materials	3	3		4
	15	9		18
Term 6 (Spring)				
57 Economics	3	0		3
115 Differential Equations	3	0		3
125 Physics	3	3		4
116 LaPlace Transforms or }	3	0		3
140 Astronomy }	3	3		4
372 Electrical Circuits	3	3		4
	15	6		17
	or 15	9		18

Note: Courses numbered in the 100's are described on pages 51-56, those numbered below 100 will be found on pages 59-63, those in the 200's are on pages 32-34, the 300 series are on pages 44-47, and the 400 series are on pages 66-70.

ENGINEERING SCIENCE

Chemical Engineering Option

1st YEAR

(Freshman year same as Engineering Science on page 49)

2nd YEAR

		Hours per Week		
		Class	Lab	Credits
Term 4 (Fall)				
55	Economics	3	0	3
113	Calculus	3	0	3
250	Organic Chemistry	3	6	5
255	Chemical Engineering Stoichiometry	3	0	3
466	Dynamics	4	0	4
		<u>16</u>	<u>6</u>	<u>18</u>
Term 5 (Winter)				
56	Economics	3	0	3
114	Differential Equations	3	0	3
124	Physics	3	3	4
251	Organic Chemistry	3	6	5
258	Chemical Engineering Stoichiometry	3	0	3
		<u>15</u>	<u>9</u>	<u>18</u>
Term 6 (Spring)				
57	Economics	3	0	3
115	Differential Equations	3	0	3
125	Physics	3	3	4
252	Organic Chemistry	3	6	5
259	Survey of Transfer Operations	3	2	4
		<u>15</u>	<u>11</u>	<u>19</u>

Note: Courses numbered in the 100's are described on pages 51-56, those numbered below 100 are on pages 59-63, those in the 200's on pages 32-34 and those in the 400 series on pages 66-70.

MATHEMATICS AND PHYSICS

Course Descriptions

101 College Algebra and Trigonometry

4 Credits

4 Class Hours

Topics in algebra and trigonometry of which a workable knowledge are necessary in technical courses. These include significant digits, scientific notation, solutions of algebraic and exponential equations, logarithms, determinants, quadratic equations, trigonometric functions, trigonometric equations, oblique triangles, laws of sines and cosines, J-operator and trigonometric scales on the slide rule.

102 Analytic Geometry and Calculus

3 Credits

3 Class Hours

Rectangular coordinates in a plane, the straight line, slope and inclination, equations of curves, discussion of a curve, functions and limits, indeterminate forms, continuity, the derivative, differentiation of algebraic functions.

(Prerequisite: 101 College Algebra and Trigonometry)

103 Analytic Geometry and Calculus

3 Credits

3 Class Hours

Applications of derivatives, maxima and minima, differentials, indefinite integral, definite integral, applications of definite integral, area between curves, volumes by cylindrical washers and shells, length of plane curve, centroid and second moment of area, moment of inertia.

(Prerequisite: 102 Analytic Geometry and Calculus)

104 Analytic Geometry and Calculus

3 Credits

3 Class Hours

The conic sections, general and standard equations of conics, transformation of coordinates, differentiation of transcendental functions, hyperbolic functions, polar coordinates, parametric equations, velocity and acceleration in curvilinear motion, curvature of plane curves.

(Prerequisite: 103 Analytic Geometry and Calculus)

105 Analytic Geometry and Calculus

3 Credits

3 Class Hours

Integration by standard forms, integration by parts, trigonometric substitution, partial fractions, use of table of integrals, applications of definite integrals, trapezoidal and parabolic approximation, improper integrals, indeterminate forms, infinite series, expansion of functions in series.

(Prerequisite: 104 Analytic Geometry and Calculus)

106 Analytic Geometry and Calculus

3 Credits

3 Class Hours

Solid analytic geometry, partial derivatives, multiple integrals, elementary differential equations, first order differential equations, integrable combinations, exact differentials, linear differential equations of first order, second order differential equations, homogeneous equations of second order, method of undetermined coefficients.

(Prerequisite: 105 Analytic Geometry and Calculus)

107 College Algebra

3 Credits

3 Class Hours

Real numbers, fundamental operations of algebra, factoring, fractions, linear equations in one unknown, systems of linear equations, exponents and radicals, quadratic equations in one and two unknowns, variation, ratio and proportion, progressions, binomial theorem, inequalities. Note: This course has the same scope as Mathematics 150, but is designed for students with better preparation in mathematics, and is taught on a more rigorous and comprehensive level.

108 College Algebra and Trigonometry

3 Credits

3 Class Hours

A continuation of 107 with an introduction to college trigonometry. Theory of equations, permutations and combinations, probability, infinite series, partial fractions. The trigonometric functions, functions of acute angles, the special angles, trigonometric identities.

(Prerequisite: 107 College Algebra)

109 College Trigonometry

3 Credits

3 Class Hours

Related angles, radian measure, graphs of trigonometric functions, functions of two angles, trigonometric equations, oblique triangles, inverse trigonometric functions, complex numbers, graphical and analytical composition of ordinates.

(Prerequisite: 108 College Algebra and Trigonometry)

110 Calculus

4 Credits

4 Class Hours

Rectangular coordinates in a plane, length of a line, slope, angle between lines, variables and constants, equations and loci, the straight line. Also discussion of the equation of a locus, derivation of equation of a locus, functions and limits, increments of functions, continuity, derivative of a function, differentiation of algebraic functions. Also explicit and implicit differentiation, inverse functions, successive differentiation tangents and normals to plane curves. Acceleration increasing and decreasing functions, maxima and minima of functions of one variable, and inflection points are also covered.

111 Calculus

4 Credits

4 Class Hours

Differentials, approximation of small errors, Rolle's theorem, mean-value theorem, Newton's method for solving equations, indefinite integral, change of variable in integration. Also definite integral, area under a curve, work done by a variable force, fundamental theorem of integral calculus, mean-value theorem for integrals, plane areas, volume by cylindrical discs and cylindrical shells, lengths of curve, centroid of area, centroid of solid, moment of inertia. Conics: circle, ellipse, parabola, hyperbola.

(Prerequisite: 110 Calculus)

112 Calculus

4 Credits

4 Class Hours

Differentiation of transcendental functions; trigonometric functions, inverse trigonometric functions, exponential functions, logarithmic functions, hyperbolic functions. Also polar coordinates, parametric equations, curvilinear motion, curvature of plane curves, integration by standard forms, integration by parts, integration by trigonometric substitution, partial fractions, reduction formulas, table of integrals.

(Prerequisite: 111 Calculus)

113 Calculus

3 Credits

3 Class Hours

Applications of definite integrals, plane areas, volumes, length of curve, surface area, centroids, theorem of Pappus, approximate integration, improper integrals, indeterminate forms, infinite series, Taylor's and MacLaurin's series, calculation of logarithms, solid analytic geometry, partial derivatives, multiple integrals.

(Prerequisite: 112 Calculus)

114 Differential Equations

3 Credits

3 Class Hours

The differential equation, hyperbolic functions. Also differential equations of the first order, separable equations, particular solutions, dynamics, chemical reactions, integrable combinations, homogeneous equations, equivalence of solutions, linear equation, electric circuits, Bernoulli's equation, orthogonal trajectories. Linear equation with constant coefficients, rectilinear motion, deflection of beams, undetermined coefficients, variation of parameter, forced vibrations and electric circuits are also covered. Applications on the Heath analog and IBM 1620 computers are included too.

(Prerequisite: 113 Calculus)

115 Differential Equations

3 Credits

3 Class Hours

Special higher order equations: reducible to linear with constant coefficients, dependent or independent variable missing. Suspended cable, simultaneous equations, systems of linear equations, roots of unity. Linear equation of second order: exact equations, Riccati equation, adjoint equation. Series solutions: power series, Frobenius series. Partial differential equations, partial derivatives, separation of variables, vibrating string. Also applications on the analog and digital computers.

(Prerequisite: 114 Differential Equations)

116 LaPlace Transforms

3 Credits

3 Class Hours

Application of LaPlace Transform methods to various engineering problems involving ordinary and linear partial differential equations.

(Prerequisite: 115 Differential Equations)

120 Physics

4 Credits

3 Class Hours, 3 Laboratory Hours

Statics and dynamics: motion in one dimension, motion in a plane, Newton's laws, friction, rotation, work and energy, impulse and momentum, statics of rigid bodies.

121 Physics

4 Credits

3 Class Hours, 3 Laboratory Hours

Oscillations, gravitation, fluid statics and dynamics, waves in elastic media. Also included are temperature, calorimetry, heat transfer, fusion, vaporization, elementary thermodynamics and kinetic theory.

(Prerequisites: 120 Physics and 110 Calculus)

122 Physics (Electricity and Magnetism)

4 Credits

3 Class Hours, 3 Laboratory Hours

Study of the fundamental laws of electric and magnetic fields with application to elementary circuit problems. Also electrostatic fields, induced emfs, inductance, capacitance and dielectrics. Steady currents and simple transients are included. Laboratory work consists of electrostatic, electromagnetic and circuit measurements.

(Prerequisites: 121 Physics and 111 Calculus)

123 Physics

4 Credits

3 Class Hours, 3 Laboratory Hours

Study of the basic physical concepts and principles related to the electrical field. These include electrostatic and magnetic fields, structure and behavior of metals, semi-conductors and insulators, energy level diagrams, electron emission and conduction in vacuum and gas.

(Prerequisites: 122 Physics and 226 Chemistry)

124 Physics

4 Credits

3 Class Hours, 3 Laboratory Hours

Light and sound: wave motion, sound and acoustical phenomena, geometrical optics, optical parts and instrumentation. Also physical optics, nature of light, interferometry and polarization of light.

125 Physics

4 Credits

3 Class Hours, 3 Laboratory Hours

An introduction to atomic and nuclear physics. The course covers charged atomic particles, the nuclear atom, electromagnetic radiation, X-rays, waves and particles. Also included are the hydrogen atom, optical spectra and electron distribution, natural radioactivity, nuclear fission, fundamental particles, isotopes and particle accelerators.

(Prerequisites: 124 Physics and 112 Calculus)

127 Physics

4 Credits

3 Class Hours, 2 Laboratory Hours

Introductory mechanics. Measurement, forces and vectors, statics, uniform motion, accelerated motion, work, power, energy, elasticity, theory and mechanics of liquids and gases.

128 Physics

4 Credits

3 Class Hours, 2 Laboratory Hours

Electricity and magnetism. Fundamental laws of electric and magnetic fields, potential, Ohm's law, Lenz's law, simple AC and DC circuits.

129 Physics**4 Credits****3 Class Hours, 2 Laboratory Hours**

Light and sound. Wave motion and sound generation, geometrical and physical optics, nature of light, action of lenses, mirrors, prisms, applications to optical instruments.

135 Science**3 Credits****2 Class Hours, 2 Laboratory Hours**

A survey of physics and chemistry. Motion, force, gravitation, atomic theory, the periodic table, energy and momentum, kinetic theory, electricity and magnetism, the nature of light.

136 Physics**3 Credits****2 Class Hours, 2 Laboratory Hours**

Heat: Temperature, heat quantities and transfer.

Mechanics: Velocity and acceleration, force and motion, friction, work and energy, power, concurrent and non-concurrent forces, projectile motion, momentum, centripetal forces, simple harmonic motion.

137 Physics**3 Credits****2 Class Hours, 2 Laboratory Hours**

Electricity: Ohm's law, circuits, instruments, power, electrochemistry, induction, alternating current.

Light: Reflection, refraction, lenses, optical instruments, color, atomic and nuclear physics.

(Prerequisite: 136 Physics)

140 Astronomy**4 Credits****3 Class Hours, 3 Laboratory Hours**

Fundamentals of astronomy including the earth's motion, earth satellite, the planets and the solar system, stellar structure and the sidereal universe. The laboratory stresses some practical aspects of astronomy, the use of the telescope and observing techniques.

(Prerequisite: 103 Analytic Geometry and Calculus)

141 Physics**4 Credits****3 Class Hours, 2 Laboratory Hours**

Mechanics: Composition and resolution of vectors, equilibrium, moment of a force, rectilinear motion, gravitation, motion in a plane, work and energy, impulse and momentum, rotation, hydrostatics, Bernoulli's equation.

Sound: Wave motion, vibrating bodies, stationary waves, resonance, harmonics, interference.

142 Physics**4 Credits****3 Class Hours, 2 Laboratory Hours**

Heat: Temperature, expansion, quantity of heat, transfer of heat, first and second laws of thermodynamics, thermal properties of solids, liquids and gases.

Light: Nature and propagation of light, reflection and refraction, lenses, illumination, color, interference and diffraction, polarization.

(Prerequisite: 141 Physics)

143 Physics (Electricity and Magnetism)

4 Credits

3 Class Hours, 2 Laboratory Hours

Coulomb's law, atomic structure, Rutherford scattering, the electric field, Gauss' law, potential gradient, capacitance and dielectrics, current and resistance, Ohm's law, Joule's law, DC circuits, Kirchhoff's rules, electrochemistry and thermoelectricity, the magnetic field and current, Faraday's and Long's laws, induced emf, magnetic properties of matter, inductance, AC circuits, and electromagnetic waves.

(Prerequisite: 101 College Algebra and Trigonometry)

150 Mathematics

3 Credits

3 Class Hours

Origin and development of the number system, the fundamental operations with real numbers, linear equations and applied problems. Ratio, proportion and percentage. Measurement and computations, exponents, variation, quadratic equations functions and graphs.

151 Mathematics

3 Credits

3 Class Hours

A continuation of Mathematics 150. Functions and graphs. Algebra applied to business. Statistics, logarithms, progressions.

(Prerequisite: 150 Mathematics)

153 Mathematics

3 Credits

3 Class Hours

A continuation of Mathematics 151. The theory of equations, determinants, probability, and the theory and use of the slide rule.

(Prerequisite: 151 Mathematics)

LIBERAL ARTS AND SCIENCES

GENERAL EDUCATION

The Liberal Arts curriculum is primarily intended to enable a student to take the first two years of a four-year degree within the community college.

This is a two-year, university-parallel program designed especially for those who wish to continue their college education at a four-year college or university. It offers an Associate in Arts Degree.

Students finishing this curriculum have completed a breadth of education preparatory to such professional careers as law, medicine and education. The required and elective courses give the students essential credits in such areas as mathematics, language, science, social studies and the humanities.

This curriculum, moreover, can perform an exploratory function for many students. It is regarded as an ideal course of study for those who have not yet decided on a specific career.

The program enables them to complete certain studies while they are making their career decisions.



A professor lecturing a class in Western Civilization.

LIBERAL ARTS AND SCIENCES

1st YEAR

Term 1 (Fall)	Hours per Week		
	Class	Lab	Credits
English Composition	3	0	3
Development of Western Civilization	3	0	3
*Mathematics or Elective	3	0	3
Biology, Chemistry or Physics	3	3	4
French, German, Spanish or Philosophy	3	0	3
Physical Education	0	2	1
	15	5	17
Term 2 (Winter)			
English Composition	3	0	3
Development of Western Civilization	3	0	3
*Mathematics or Elective	3	0	3
Biology, Chemistry or Physics	3	3	4
French, German, Spanish or Philosophy	3	0	3
Physical Education	0	2	1
	15	5	17
Term 3 (Spring)			
English Composition	3	0	3
Development of Western Civilization	3	0	3
*Mathematics or Elective	3	0	3
Biology, Chemistry or Physics	3	3	4
French, German, Spanish or Philosophy	3	0	3
Physical Education	0	2	1
	15	5	17

2nd YEAR

Term 4 (Fall)			
Literature	3	0	3
Psychology, Economics or Sociology	3	0	3
Language or Elective	3	0	3
**Electives	6	0-2	6-7
Physical Education	0	2	1
	15	2-4	16-17
Term 5 (Winter)			
Literature	3	0	3
Psychology, Economics or Sociology	3	0	3
Language or Elective	3	0	3
**Electives	6	0-2	6-7
Physical Education	0	2	1
	15	2-4	16-17
Term 6 (Spring)			
Literature	3	0	3
Psychology, Economics or Sociology	3	0	3
Language or Elective	3	0	3
**Electives	6	0-2	6-7
Physical Education	0	2	1
	15	2-4	16-17

* Students who have completed $3\frac{1}{2}$ units of high school mathematics may enroll in an elective subject.

** Electives may be taken for a concentration in the areas of humanities, social science, mathematics, or science.

LIBERAL ARTS AND SCIENCES

Course Descriptions

- 10 Beginning French** **3 Credits**
11
12 **3 Class Hours**
Systematic study of grammar, syntax and vocabulary. Also audio-lingual laboratory work and some reading of graded literary texts of intrinsic value and mature content.
- 13 Intermediate French** **3 Credits**
14
15 **3 Class Hours**
Review of grammar with emphasis on difficult problems of syntax and translation. Also additional audio-lingual laboratory work and some concentration on conversation. Reading and discussion of original texts of standard authors and cultural material are also included.
(Prerequisite: French 12 or 2 years of high school French)
- 16 Introduction to French Literature** **3 Credits**
17
18 **3 Class Hours**
Extensive reading, lectures and reports on masterpieces of French literature and the cultural background from Chanson de Rolande to modern times. The audio-lingual laboratory will be used to hear recordings of masterpieces.
(Prerequisite: French 15 or consent of instructor)
- 19 Beginning German** **3 Credits**
20
21 **3 Class Hours**
Systematic study of grammar, syntax and vocabulary. Also audio-lingual laboratory work and some reading of graded literary texts of intrinsic value and mature content.
- 22 Intermediate German** **3 Credits**
23
24 **3 Class Hours**
Review of grammar with emphasis on difficult problems of syntax and translation. Also additional audio-lingual laboratory work and some concentration on conversation. Reading and discussion of original texts of standard authors and cultural material are also included.
(Prerequisite: German 21 or 2 years of high school German)
- 30 English Composition** **3 Credits**
3 Class Hours
Introduction to the nature and history of language. Instruction and practice in the writing of short, expository themes are also covered, as well as the study of selected essays as models of expository prose.
- 31 English Composition** **3 Credits**
3 Class Hours
Continued expository theme-writing. Also instruction and practice in argumentation. Also covered are the idea and technique of the research paper, speeches and talks, and selected poems. The emphasis on poetry is on the fresh, vivid and compact use of language.
- 32 English Composition** **3 Credits**
3 Class Hours
Introduction to writing that criticizes and evaluates. Modern essays and novels are read, with the emphasis on recognizing and discussing significant twentieth century themes.

- 33

English Literature

3 Credits

3 Class Hours

The history and development of the English novel as a literary form. Representative English novels are read and discussed, from Fielding's *Joseph Andrews* to Conrad's *Lord Jim*. Attention will be given to themes and structure of the novel.

(Prerequisite: English Composition 30-32 or equivalent)
- 34

English Literature

3 Credits

3 Class Hours

English dramatic literature from the Middle Ages to 1900. The emphasis is on the dramatic techniques and the historical, social and intellectual climate of the time.
- 35

English Literature

3 Credits

3 Class Hours

This course covers English non-dramatic poetry from Chaucer to Eliot. Metrics and and versification are stressed. Sounds, words, symbols, images, metaphors and tone are analyzed in selected poems of various forms and types. This analysis is intended to isolate some of the characteristics of poetry and to develop better criteria by which to understand poetic structure.
- 36

World Literature

3 Credits

3 Class Hours

Reading and analysis of important works of Western World literature from classical antiquity to the modern day. The authors covered include Homer, Sophocles, Virgil, Dante, Swift, Cervantes, Voltaire, Dostoevski and Faulkner.
- 37

English Literature of the 17th Century

3 Credits

3 Class Hours

The non-dramatic English literature of the seventeenth century is surveyed in its relationship to the scientific, political and religious life of the era. The emphasis is on the major writers, excluding Milton.
- 38

Modern American Drama

3 Credits

3 Class Hours

This course covers dramatic literature in America from O'Neill to Williams, Miller, Hellman, Inge, Thurber, Anderson and others. The revitalization of old dramatic forms and experimentation with new ones are emphasized.
- 39

Beginning Spanish

3 Credits

3 Class Hours

Systematic study of grammar, syntax and vocabulary. Also audio-lingual laboratory work and some reading of graded literary texts of intrinsic value and mature content.
- 42

Intermediate Spanish

3 Credits

3 Class Hours

Review of grammar with emphasis on difficult problems of syntax and translation. Also additional audio-lingual laboratory work and some concentration on conversation. Reading and discussion of original texts of standard authors and cultural material are also included.

(Prerequisite: Spanish 41 or 2 years of high school Spanish)
- 45

Development of Western Civilization

3 Credits

3 Class Hours

The development of man from the dawn of history through the classical civilizations of Greece and Rome, to the Middle Ages and the Renaissance.
- 46

Development of Western Civilization

3 Credits

3 Class Hours

This period covers the Reformation, the emergence of modern Europe, humanism, exploration and invention, the age of enlightenment, colonialism and the age of revolutions.

47 Development of Western Civilization

3 Credits

3 Class Hours

From the close of the Napoleonic period to the present. This course deals with the development of nationalism, the beginning of liberalism, the growth of industrialism, the two World Wars and present day tensions. The social and cultural trends of the respective periods are stressed.

48 History of Latin America

3 Credits

3 Class Hours

Pre-Colombian Latin America, the Spanish and Portugese conquests and the colonial period.

49 History of Latin America

3 Credits

3 Class Hours

Latin America's wars of independence and the economic and cultural developments of the nineteenth century.

50 History of Latin America

3 Credits

3 Class Hours

The major Latin American nations in the twentieth century in terms of political, economic, and social institutons and problems.

55 Economics

3 Credits

3 Class Hours

Introduction to the American economy. This course covers the foundations of economic progress, free private enterprise in the United States, money and the banking system, economic growth in America, business fluctuations, monetary and fiscal policies, practical problems of stabilization policy.

56 Economics

3 Credits

3 Class Hours

This course covers business enterprise in our economy, the role of the consumer, monopoly and monopolistic competition, government and business, government and labor, distribution of income, labor unionism and collective bargaining.

57 Economics

3 Credits

3 Class Hours

This course covers property incomes, profits, wage-price policy and the role of government, public finance, international trade, financing international transactions, international monetary fiscal policy. Also comparative economic systems, the under-developed countries and social security in the United States.

58 Sociology

3 Credits

3 Class Hours

This course covers the modes of sociological analysis, social change, society, culture, patterned behavior. Also such concepts as role, status, sex differences and the emphasis on the sociological perspective.

59 Sociology

3 Credits

3 Class Hours

The application of sociological methodologies and concepts to social stratification, racial and ethnic groups, family, bureaucracy, ecology and urbanism.

(Prerequisite: Sociology 58 or equivalent)

60 Sociology

3 Credits

3 Class Hours

The application of sociological methodologies and concepts to technology, economy in society, power, authority, political institutions, religion, population, conformity and social control, deviant behavior and social disorganization.

(Prerequisite: Sociology 59 or equivalent)

61	Philosophy	3 Credits 3 Class Hours
	The principles of deductive and inductive logic, methodology and the history of philosophy.	
62	Philosophy	3 Credits 3 Class Hours
	The various systems of thought. These include idealism, rationalism, theism, empiricism, positivism, pragmatism, scepticism, and existentialism.	
63	Philosophy	3 Credits 3 Class Hours
	Ethics — moral values, rules of conduct and guides to action. Aesthetics — the science of beauty, the rules and principles of art.	
64	Psychology	3 Credits 3 Class Hours
	Fundamentals of anatomy and physiology underlying human and animal behavior. These include senses, receptors, effectors, nerve action, nervous systems, and the brain.	
65	Psychology	3 Credits 3 Class Hours
	Psychological mechanisms of behavior — learning, memory, problem-solving and thinking.	
66	Psychology	3 Credits 3 Class Hours
	The individual related to his external environment — perception, attending, individual differences, intelligence, motivation, conflict.	
71	English	3 Credits 3 Class Hours
	The first in a series of courses designed to help the student understand language and to use it effectively. This course aims to have the student formulate, organize and express ideas in speech and writing and to enlarge his experience through thought-provoking reading. The nature of language and its history, a review of grammar, diction, sentences and paragraphs are covered. Speeches and themes are an important part of the course.	
72	English	3 Credits 3 Class Hours
	Introduction to semantics, tone and style. Students write from observation and experience, and thinking is stressed in terms of definition, logic and persuasion. Speeches and themes are an important part of the course.	
73	English	3 Credits 3 Class Hours
	This course is designed to broaden the student's understanding of our culture by introducing him to some challenging ideas from recognized writers. These ideas deal philosophically with man and his views of the world and are used here to help improve the quality of the student's thinking. Class discussions and written reports help to develop the student's skill of expression.	
75	Effective Speaking	3 Credits 3 Class Hours
	This course covers speech communication through voice, words and action. Voice production, diction and platform presence are stressed along with the organization of ideas. Practice is afforded in presenting speeches of different types and the techniques of group discussion are included.	

77 American Literature

3 Credits
3 Class Hours

American Literature during the most recent times as seen through the reading of selected pieces of prose and poetry of such writers as Poe, Melville, Miller, and Steinbeck. The stress is upon the emergence of ideas relative to our time and society.

88 Descriptive Astronomy

3 Credits
3 Class Hours

Description of the structure of the astronomical universe, touching on stars, planets, satellites, nebulae and galaxies. The instruments and techniques of astronomical research are also covered, along with the history, orbits and purposes of artificial earth satellites and interplanetary vehicles.

90 Logic

3 Credits
3 Class Hours

A study of logical methods of thought and analysis. The emphasis is placed on avoiding fallacies and using deduction, induction and subjective factors in sound thinking.

91 Psychology

3 Credits
3 Class Hours

Principles of psychology as they relate to the problems of human behavior. The emphasis is on perception, intelligence, learning, memory, motivation, personality, psychological measurement and the problems of adjustment.

92 Economics

3 Credits
3 Class Hours

Economic facts and principles and their application to the American society. This course covers production, consumption, forms of business ownership, national income and money, credit, banking, taxation and social security. Also labor-management relations, business cycles, international trade, comparison of capitalism with other economic systems.

94 Sociology

3 Credits
3 Class Hours

Human groups, their activities, interrelationships, forces influencing them, and the influence of groups upon individuals and society. The emphasis is on the foundations of society, our cultural environment, the family, education, religion, as well as on the growth of the individual within the social framework, the aged in modern society and social progress.

96 Introduction to Philosophy

3 Credits
3 Class Hours

An introduction to the basic problems of philosophy through the study of such issues as the nature of truth, origin and development of life, idealism, naturalism, ethics, freedom and the natural and supernatural.

97 Political Science

3 Credits
3 Class Hours

A study of American government — organization, foreign policy, problems of welfare, labor and business. Also the forces at work within our democracy — political roots, individual rights, pressure groups, party systems and bureaucracy.

99 Music in the Modern Culture

3 Credits
3 Class Hours

An introduction to the essentials of musical knowledge needed to understand and appreciate all forms of music, through a study of rudiments, harmony, style and form. Important music and musicians since 1850 are covered, including the present jazz idiom and the role of music in film and television production.

MECHANICAL TECHNOLOGY

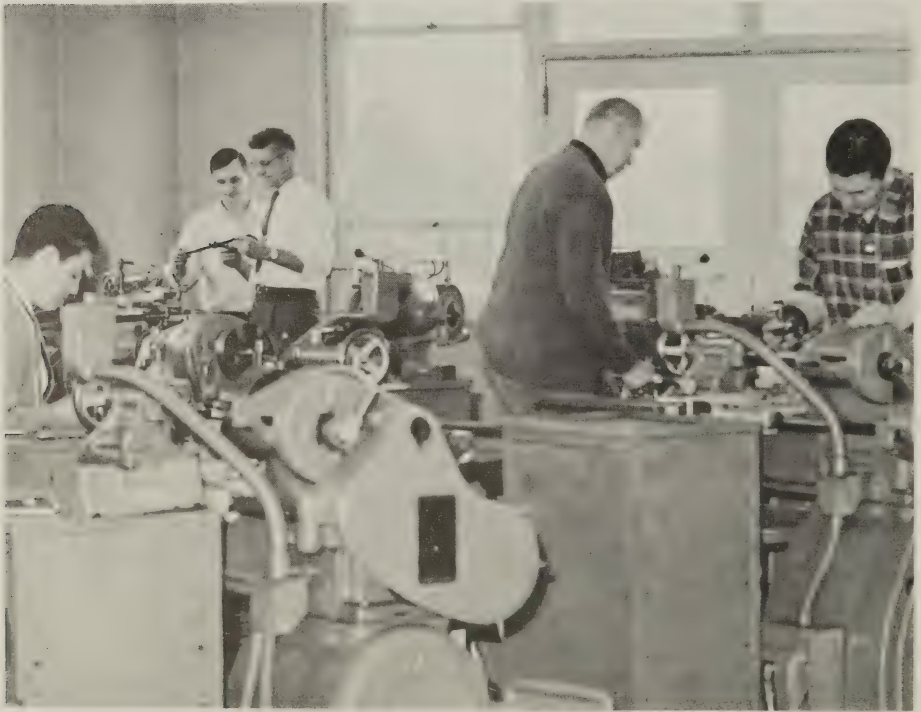
The nature of industry today makes it more important than ever that applicants for employment have a high degree of technical competence. The purpose of the Mechanical Technology curriculum is to prepare qualified young people of our community to fill the growing demand in industry and business for engineering technicians in the mechanical field.

Recent studies of our complex industrial economy show a critical need for engineering technicians. Many more are needed than can be supplied by two-year colleges, which explains why graduates of this curriculum have little difficulty finding jobs.

Initial employment opportunities are in the area between the skilled craftsman and the professional engineer, with the emphasis in the direction of the engineer.

Recent graduates have been employed in such areas as design drafting, product design, metallurgical laboratories, quality control, time study, purchasing, technical writing and process planning, to name just a few. Some of the companies that hired last year's graduates are IBM, Scintilla Division of Bendix Corp. in Sidney, Ansco, DuPont and Eastman Kodak. Many graduates accept positions far beyond the boundaries of New York State, even though the attempt is made to satisfy the needs of industry in Broome County.

This curriculum is accredited by the Engineers' Council for Professional Development (ECPD).



Mechanical Technology students at work in the machine tool laboratory.

MECHANICAL TECHNOLOGY

1st YEAR

		Hours per Week		
		Class	Lab	Credits
Term 1 (Fall)				
71	English	3	0	3
101	College Algebra and Trigonometry	4	0	4
141	Physics	3	2	4
212	Chemistry	3	2	4
400	Manufacturing Processes	2	2	3
430	Engineering Drawing	0	3	1
490	Orientation	1	0	0
		16	9	19
Term 2 (Winter)				
72	English	3	0	3
91	Psychology	3	0	3
102	Analytic Geometry and Calculus	3	0	3
142	Physics	3	2	4
401	Manufacturing Processes	1	3	2
431	Engineering Drawing and Descriptive Geometry	1	3	2
440	Applied Mechanics	3	0	3
		17	8	20
Term 3 (Spring)				
73	English	3	0	3
103	Analytic Geometry and Calculus	3	0	3
143	Physics	3	2	4
402	Manufacturing Processes	1	3	2
441	Applied Mechanics	3	0	3
446	Metallurgy	3	3	4
		16	8	19

2nd YEAR

Term 4 (Fall)				
92	Economics	3	0	3
104	Analytic Geometry and Calculus or	}	0	3
493	Organization and Management			
377	Electricity	3	3	4
403	Precision Measurement	1	3	2
426	Fluid Mechanics	3	0	3
442	Strength of Materials	3	2	4
		16	8	19
Term 5 (Winter)				
105	Analytic Geometry and Calculus or	}	0	3
494	Organization and Management			
378	Electricity	3	3	4
432	Mechanical Design	2	3	3
444	Thermodynamics	3	3	4
450	Statistical Quality Control	3	2	4
		14	11	18
Term 6 (Spring)				
94	Sociology	3	0	3
379	Electronics	3	3	4
404	Materials and Processes	3	3	4
433	Mechanical Design	3	3	4
448	Mechanical Equipment	3	3	4
		15	12	19

Note: Courses numbered in the 400's are described on pages 66-70, those numbered below 100 will be found on pages 59-63, those in the 100 series on pages 51-56, those in the 200's on pages 32-34, and those in the 300's on pages 44-47.

MECHANICAL TECHNOLOGY

CIVIL TECHNOLOGY

Course Descriptions

400 Manufacturing Processes

3 Credits

2 Class Hours, 2 Laboratory Hours

A comprehensive study of basic manufacturing processes and materials. This course is designed to give a knowledge of melting and casting metal, powdered metallurgy, plastics and the elementary aspects of metal-cutting machine tools. Also the practice and study of oxyacetylene, arc and resistance welding.

401 Manufacturing Processes

2 Credits

1 Class Hour, 3 Laboratory Hours

The elements of machine tool operation, involving the use of the lathe, miller, shaper, drill press, as well as fundamental bench operations. Also the study of cutting speeds, feeds, coolants, threads, tapers and tool grinding.

(Prerequisites: 400 Manufacturing Processes, 101 College Algebra & Trigonometry and 430 Engineering Drawing)

402 Manufacturing Processes

2 Credits

1 Class Hour, 3 Laboratory Hours

Continuation of Manufacturing Processes 401 plus the operations of the surface grinder and cylindrical grinder, advanced lathe operations, jig boring, gear cutting, lapping, honing and scraping. Also the practice and study of the turret lathe and automatic screw machine.

(Prerequisite: 401 Manufacturing Processes)

403 Precision Measurement

2 Credits

1 Class Hour, 3 Laboratory Hours

The theory and practice of precision measurement of the dimensional character of manufactured parts. Also the measurement of physical quantities, such as time, mass, temperature, flow, pressure and speed, which are utilized in the control of physical systems.

(Prerequisites: 402 Manufacturing Processes, 142 Physics and 143 Physics)

404 Materials and Processes

4 Credits

3 Class Hours, 3 Laboratory Hours

A study of the properties and applications of engineering materials and the processes involved in their utilization.

(Prerequisites: 400 Manufacturing Processes, 446 Metallurgy and 442 Strength of Materials)

406 Statics

3 Credits

3 Class Hours

This is the first in a two-course elective sequence for students in the Electrical Technology program. A study of forces and force systems on rigid bodies at rest. Also equilibrium, free body concept, centroids and centers of gravity, and moments of inertia

(Prerequisite: 101 College Algebra and Trigonometry)

407 Strength of Materials

3 Credits

3 Class Hours

The second in a two-course elective sequence for students in the Electrical Technology program. A study of stress and deformation, engineering materials and their properties. Also welded joints, torsion, shear, moments, stresses and deflection in beams, design of beams, combined stresses and columns.

(Prerequisite: 406 Statics)

414 Engineering Drawing

1 Credit

3 Laboratory Hours

A basic drafting course specifically designed for Business Students.

416 Engineering Drawing

2 Credits

6 Laboratory Hours

An introductory course in communication by mechanical drawings. Practice in the use of freehand and instruments for orthographic projection, drafting conventions, dimensioning, typical layouts and work drawings of chemical devices and equipment.

417 Engineering Drawing

2 Credits

6 Laboratory Hours

Basic orientation in engineering drawing. The course includes line and instrument exercises, lettering, orthographic projection, dimensioning and notes, auxiliary views, sections, threads and fasteners, assemblies and sketching.

418 Shop

2 Credits

1 Class Hour, 3 Laboratory Hours

Observation and discussion of the machines and materials used in industry to produce machines, appliances, containers. Practice is given in processing metals, which leads to an acquaintance of technical and shop terms and a knowledge of what is done in machine shops.

424 Strength of Materials

4 Credits

3 Class Hours, 3 Laboratory Hours

This course covers the relation between stress and strain, welded and riveted joints, as well as torsion, shear and moments in beams and stresses in beams. The laboratory work includes tests on wood, concrete, metals and plastics in accordance with ASTM testing specifications.

(Prerequisites: 440 Mechanics and 102 Analytic Geometry and Calculus)

426 Fluid Mechanics

3 Credits

3 Class Hours

The behavior of compressible and non-compressible fluids under static and dynamic conditions. This includes the principles of hydrostatics, pressure measurement, flow, flow measurement, viscosity, hydrodynamic power and force.

(Prerequisites: 142 Physics, 103 Analytic Geometry and Calculus and 440 Applied Mechanics)

427 Heating, Ventilating and Air Conditioning

3 Credits

3 Class Hours

The fundamentals of heating, ventilating and air conditioning. These include the theory, design, layout and installation of steam, hot water, and warm air heating systems and air conditioning systems.

(Prerequisite: 103 Analytic Geometry and Calculus and 142 Physics)

430 Engineering Drawing

1 Credit

3 Laboratory Hours

Basic orientation in engineering drawing. Topics covered include line and instrument exercises, lettering, orthographic projection, dimensioning and notes, and auxiliary views and sections.

431 Engineering Drawing and Descriptive Geometry

2 Credits

1 Class Hour, 3 Laboratory Hours

Rules and practice for threads, fasteners, assemblies and sketching. Also investigation of the principles of descriptive geometry in order to determine true relationships between lines and surfaces, to find intersections, to ascertain clearances, and to decide relationships affecting the design of parts in a machine or structure.

(Prerequisite: 430 Engineering Drawing)

432 Mechanical Design

4 Credits

2 Class Hours, 3 Laboratory Hours

Machine motion and basic mechanisms. Machine motion includes rectilinear and curvilinear displacement, velocity and acceleration. Basic mechanisms include linkages, cams and gears.

(Prerequisites: 430 Engineering Drawing, 441 Applied Mechanics and 442 Strength of Materials)

433 Mechanical Design

4 Credits

3 Class Hours, 3 Laboratory Hours

Principles of mechanical design, covering the selection of materials, stress investigation and the design of fundamental machine elements.

(Prerequisites: 432 Mechanical Design and 402 Manufacturing Processes)

436 Architectural Drawing

1 Credit

3 Laboratory Hours

The history of residential architecture. Preliminary planning and materials are also covered.

(Prerequisite: 438 Descriptive Geometry)

437 Architectural Drawing

1 Credit

3 Laboratory Hours

Development of working drawings for use in residential-type construction. These drawings include plot plans, floor plans, elevations, details, and mechanical and electrical layouts.

(Prerequisite: 436 Architectural Drawing)

438 Descriptive Geometry

2 Credits

1 Class Hour, 2 Laboratory Hours

Basic principles of descriptive geometry. This course is designed to determine true relationships between lines and surfaces, to find intersections, to locate elements or tangents, to ascertain clearances and to decide relationships affecting the design of parts in a machine or structure.

(Prerequisite: Engineering Drawing)

439 Architectural Drawing

1 Credit

3 Laboratory Hours

Sketching and perspective drawing. An introduction to the planning of commercial-industrial type buildings.

(Prerequisite: 437 Architectural Drawing)

440 Applied Mechanics (Statics)

3 Credits

3 Class Hours

Principles of statics. This course covers free body diagrams, trusses, force systems in space, friction, centroids and moments of inertia.

(Prerequisites: 101 College Algebra and Trigonometry and 141 Physics)

441 Applied Mechanics (Dynamics)

3 Credits

3 Class Hours

Principles of dynamics. This course covers velocity, acceleration, mass moments of inertia, kinetics, plane motion, work, power, kinetic and potential energy, impulse and momentum.

(Prerequisite: 440 Applied Mechanics)

442 Strength of Materials

4 Credits

3 Class Hours, 2 Laboratory Hours

Stress and strain, elasticity, torsion, welded joints, riveted joints, beam stresses, beam deflections, eccentric loading and column stresses.

(Prerequisites: 440 Applied Mechanics and 103 Analytic Geometry and Calculus)

443 Strength of Materials

4 Credits

3 Class Hours, 3 Laboratory Hours

A continuation of 442 Strength of Materials. This course covers the design of beams and columns, bending, shearing and combined stresses. Also the deflection of beams, statically indeterminate beams, energy methods and the design of timber members and connections. The laboratory work includes tests on cement, aggregates, concrete and highway materials. These tests are conducted in accordance with procedures and fatigue tests on metals approved by the ASTM and AASHTO.

(Prerequisite: 442 Strength of Materials)

444 Thermodynamics

4 Credits

3 Class Hours, 3 Laboratory Hours

The interchange of energy between mechanical and thermal form. Energy relationships are developed from the perfect gas laws and the general energy equation. These relationships are employed to study practical heat cycles, such as air compression, the internal combustion engine, steam generation, pumps and refrigeration.

(Prerequisites: 441 Applied Mechanics, 142 Physics, 103 Analytic Geometry and Calculus and 426 Fluid Mechanics)

446 Metallurgy

4 Credits

3 Class Hours, 3 Laboratory Hours

Fundamentals of the physical metallurgy of ferrous and non-ferrous alloys, investigation of the physical properties of metals, hardness tests, thermal analysis and grain structure examination.

(Prerequisites: 142 Physics and 210 Chemistry)

448 Mechanical Equipment

4 Credits

3 Class Hours, 3 Laboratory Hours

Thermodynamic properties and the utility of mechanical equipment. Topics covered include fuel burners, internal combustion engines, pumps, fans, refrigeration and air conditioning units, gas turbines and hydraulic turbines.

(Prerequisite: 444 Thermodynamics)

450 Statistical Quality Control

4 Credits

3 Class Hours, 2 Laboratory Hours

Probability and statistics as they pertain to sampling theory and the control of quality in the manufactured product — standard deviation, areas under and ordinates of the normal curve, the poisson, control charts. Also single, double and sequential sampling plans, machine capability, product reliability and statistical dimensioning.

(Prerequisites: 403 Precision Measurement and 103 Analytic Geometry and Calculus)

453 Strength of Materials

4 Credits

3 Class Hours, 3 Laboratory Hours

The relationship between stress and strain, the calculation of stresses in machine parts, beams and columns. Also the use of shear and moment diagrams, the determination of moments of inertia and centers of gravity, the analysis of the effect of loading on stress distribution. The laboratory work includes tests on wood, concrete, plastics and metal on standard testing machines in accordance with ASTM testing procedures.

(Prerequisites: 465 Statics and 111 Calculus)

465 Statics

4 Credits

4 Class Hours

Principles of forces, moments and couples in static force systems.

(Prerequisites: 111 Calculus and 121 Physics)

466 Dynamics

4 Credits

4 Class Hours

The concepts and principles of kinetic particles and systems, and the general methods of analysis of such systems.

(Prerequisite: 465 Statics)

470 Reinforced Concrete Design

4 Credits

3 Class Hours, 3 Laboratory Hours

Design, investigation and detailing of basic reinforced concrete structural members. This course includes a term project.

(Prerequisite: 443 Strength of Materials)

471 Structural Steel Design

4 Credits

3 Class Hours, 3 Laboratory Hours

Design, investigation and detailing of basic structural steel members. A term project is included.

(Prerequisite: 470 Reinforced Concrete Design)

- 472 Building Design** **5 Credits**
3 Class Hours, 6 Laboratory Hours
Commercial-industrial building design, with emphasis on cost estimating.
(Prerequisite: 439 Architectural Drawing)
- 476 Surveying** **5 Credits**
3 Class Hours, 6 Laboratory Hours
Plane surveying. The topics covered include distance measurement, note keeping, compass surveying, leveling, angle measurement, care and use of instruments, stadia, plane table topography, traversing, coordinates, area computation and mapping.
(Prerequisite: 101 College Algebra & Trigonometry)
- 477 Surveying** **4 Credits**
2 Class Hours, 6 Laboratory Hours
Continuation of 476 Surveying. This course also covers the observation of meridian, triangulation, land surveys, horizontal and vertical control, hydrographic surveying and photogrammetry.
(Prerequisite: 476 Surveying)
- 478 Surveying** **4 Credits**
2 Class Hours, 6 Laboratory Hours
Fundamentals of plane surveying. Use and care of equipment, traversing and area computation, note keeping and mapping.
- 483 Route Surveying and Highway Design** **4 Credits**
3 Class Hours, 3 Laboratory Hours
Problems of route selection, field technique, route design, construction and maintenance. In addition, earthwork, simple, compound, spiral and vertical curves are covered in detail, together with selected reading assignments. A term project is included.
(Prerequisites: 477 Surveying and 103 Analytic Geometry and Calculus)
- 485 Construction Planning** **3 Credits**
3 Class Hours
Construction planning and management techniques. Selection of proper equipment and methods, including such topics as tractors, excavation, tires, conveyors, compressed air, drilling and blasting, tunneling, grouting, pumping, production of aggregates, and safety.
- 487 Soil Mechanics** **4 Credits**
3 Class Hours, 3 Laboratory Hours
A study of soil in its relationship to engineering construction. The topics covered include soil density, sampling soil water, origin and nature of soil, flow nets and seepage forces, classification, frost action, stabilization, stress, consolidation, settlement, shearing strength, stability, embankments, dams, retaining walls, piles and underground conduits. The laboratory work covers ASTM and AASHTO specifications used in classifying and predicting the behavior of soils.
(Prerequisite: 424 Strength of Materials)
- 490 Orientation** **0 Credits**
1 Class Hour
A discussion of the task that the student in engineering technology must face. Information relative to the technical fields is given, and the slide rule and its uses are studied.
- 493 Organization and Management** **3 Credits**
3 Class Hours
Principles, functions and coordination of industrial organization. Topics covered include management, costs, product development, marketing, methods analysis, work measurement, plant layout, material handling, production and inventory control.
- 494 Organization and Management** **3 Credits**
3 Class Hours
A study of the applications in industry of the techniques used in carrying out the functions covered in course 493 Organization and Management.
(Prerequisite: 493 Organization and Management)

MEDICAL OFFICE ASSISTANT

The place of the Medical Office Assistant is a relatively new one in the medical field. Graduates of this curriculum have employment opportunities in the physicians' offices, hospital laboratories and record rooms, and in related fields.

Broome Tech prepares young women for this career by offering a specialized training that combines secretarial work with clinical procedures. Experience has shown that intensive instruction in the courses of the business field blend well with the laboratory work to produce a well qualified medical office assistant.

Thus a young woman must be versatile to qualify for this kind of career. She must also be fitted by training and personality to work with professional medical people in various ways.

In addition to a basic knowledge of such skills as typing, accounting and office procedure, she must know such technical subjects as anatomy, physiology, chemistry and pharmacology. She must also master the clinical laboratory procedures of urinalysis, hematology, and blood chemistries to complete the program.

There have been too few graduates in recent years to meet the demand for people in this important phase of medical service. As a result, employment opportunities have been good.



Students in the Medical Office Assistant program work with the microscope in their laboratory and clinical procedures.

MEDICAL OFFICE ASSISTANT

1st YEAR

		Hours per Week		
		Class	Lab	Credits
Term 1 (Fall)				
71	English	3	0	3
150	Mathematics	3	0	3
232	Chemistry	3	3	4
500	Ethics and Orientation	0	2	1
529	Zoology	2	4	4
*601	Typewriting	0	5	2
		<u>11</u>	<u>14</u>	<u>17</u>
Term 2 (Winter)				
72	English	3	0	3
233	Chemistry	3	3	4
531	Zoology	2	4	4
602	Typewriting	0	5	2
604	Shorthand	2	3	3
		<u>10</u>	<u>15</u>	<u>16</u>
Term 3 (Spring)				
73	English	3	0	3
520	Medical Office Procedures	1	3	2
521	Clinical Laboratory Procedures	1	3	2
532	Anatomy	3	3	4
603	Typewriting	2	3	3
605	Shorthand	2	3	3
		<u>12</u>	<u>15</u>	<u>17</u>

2nd YEAR

Term 4 (Fall)				
91	Psychology	3	0	3
533	Physiology	2	6	4
550	Microbiology	3	4	5
*612	Medical Shorthand	2	3	3
633	Office Practice (Medical)	2	3	3
		<u>12</u>	<u>16</u>	<u>18</u>
Term 5 (Winter)				
92	Economics	3	0	3
534	Physiology	2	4	4
551	Microbiology	2	4	4
585	Pharmacology	3	0	3
*613	Medical Shorthand	2	3	3
634	Office Practice (Medical)	1	3	2
		<u>13</u>	<u>14</u>	<u>19</u>
Term 6 (Spring)				
94	Sociology	3	0	3
552	Microbiology	2	6	4
*614	Medical Shorthand	2	3	3
635	Office Practice (Medical)	2	3	3
675	Business English	3	0	3
		<u>12</u>	<u>12</u>	<u>16</u>

* or elective

Note: Courses numbered in the 500's are described on pages 73-76, those numbered below 100 are on pages 59-63, those in the 100 series on pages 51-56, those in the 200's on pages 32-34, and those in the 600's on pages 24-29.

BIOLOGICAL SCIENCES

Course Descriptions

500 Ethics and Orientation

1 Credit

2 Laboratory Hours

Introduction to medical science, stressing professional ethics and the responsibility of the physician's assistant to herself, the physician and the patient.

501 Biology

4 Credits

3 Class Hours, 3 Laboratory Hours

Principles that are fundamental to living organisms, such as metabolism, genetics, evolution, ecology and conservation.

502 Biology

4 Credits

3 Class Hours, 3 Laboratory Hours

Structure, morphology, physiology. Also phylogeny of animals and their relatedness to man.

(Prerequisite: 501 Biology)

503 Biology

4 Credits

3 Class Hours, 3 Laboratory Hours

Structure, physiology, reproduction and phylogeny of plants; their influence on man.

(Prerequisite: 502 Biology)

520 Medical Office Procedures

2 Credits

1 Class Hour, 3 Laboratory Hours

Medical assisting procedures used in the physician's office. Also techniques of caring for the office, first aid, professional ethics, jurisprudence and nomenclature. Open only to Medical Office Assistant students.

521 Clinic

2 Credits

1 Class Hour, 3 Laboratory Hours

Analytical procedures, qualitative and microscopic, as performed in the physician's office laboratories. Also urinalysis and complete blood counts.

(Prerequisite: 233 Chemistry)

529 Zoology

4 Credits

2 Class Hours, 4 Laboratory Hours

Fundamental physical and chemical phenomena involved in a study of animals, including atomic and molecular structure, cellular dynamics, energy problems and life processes.

530 Zoology

4 Credits

2 Class Hours, 4 Laboratory Hours

A study of invertebrate animals, their morphology, physiology and phylogeny.

(Prerequisite: 501 Biology or 529 Zoology)

531 Zoology

4 Credits

2 Class Hours, 4 Laboratory Hours

Vertebrate zoology, including the gross structure and physiology, the microscopic details, and the organ systems of animals in general. Lectures and laboratory work are introductory to the field of animal life.

(Prerequisite: 529 Zoology)

532 Anatomy

4 Credits

3 Class Hours, 3 Laboratory Hours

Normal human structure is studied, with the laboratory work illustrating these structures by dissection and microscopic study of foetal pig and cat.

(Prerequisite: 531 Zoology or 502 Biology with departmental permission)

533 Physiology

4 Credits

2 Class Hours, 6 Laboratory Hours

Fundamental physiological processes and how these processes regulate the human machine. Laboratory work includes microscopic, kymographic, and chemical tests, as well as principles and practice of electrocardiography and basal metabolism.

(Prerequisites: 532 Anatomy and 233 Chemistry or equivalent)

534 Physiology

4 Credits

2 Class Hours, 4 Laboratory Hours

Continued study of physiological processes with related chemical and microscopic analysis of body fluids.

(Prerequisite: 533 Physiology)

535 Histology

4 Credits

2 Class Hours, 4 Laboratory Hours

The essential morphological and functional characteristics of tissues and organs of the animal body.

(Prerequisite: 532 Anatomy)

537 Genetics

4 Credits

3 Class Hours, 2 Laboratory Hours

Investigation of basic laws of inheritance, integration of fundamental principles of biology, examination of implications for human welfare.

(Prerequisite: 502 Biology or 531 Zoology)

550 Microbiology

5 Credits

3 Class Hours, 4 Laboratory Hours

The biology of the common bacteria and related micro-organisms. Also covered are non-pathogens and pathogens, basic phases of immunology, asepsis, disinfection, sterilization, cultivation, identification.

(Prerequisite: 233 Chemistry or 503 Biology or equivalent)

551 Microbiology

4 Credits

2 Class Hours, 4 Laboratory Hours

Immunology and the microbiology of important diseases. Also antigen-antibody reactions.

(Prerequisites: 533 Physiology and 550 Microbiology)

552 Microbiology

4 Credits

2 Class Hours, 6 Laboratory Hours

Continued study of the principles of immunity and the practice of serological techniques; agglutination and precipitation tests in general; inflammation and leucocyte response; blood grouping and typing.

(Prerequisite: 551 Microbiology)

559 Microbiology

4 Credits

2 Class Hours, 4 Laboratory Hours

General and medical microbiology; the basic phases of immunology; sepsis, disinfection, sterilization, cultivation, identification. Tests used for diagnosis and immunization.

(Prerequisite: 233 Chemistry)

571 Anatomy and Physiology

4 Credits

3 Class Hours, 3 Laboratory Hours

Gross and microscopic anatomy of the human body and the function of its parts. Emphasis is on form and structure. Laboratory work includes microscopic anatomy, dissection of the foetal pig and cat, a study of the systems and their inter-relationship.

572 Anatomy and Physiology

4 Credits

3 Class Hours, 3 Laboratory Hours

Continued study of gross and microscopic anatomy, the relationship of function to structure, with emphasis on basic physiology. Some dissection and chemical tests. Dissection of foetal pig and cat and chemical tests are also included.

(Prerequisite: 571 Anatomy and Physiology)

573 Anatomy and Physiology

3 Credits

2 Class Hours, 2 Laboratory Hours

Gross and microscopic anatomy of the human body and the function of its parts. Emphasis is on form and structure. Laboratory work includes microscopic anatomy, dissection of the foetal pig and cat, a study of the systems and their inter-relationship.

(Prerequisite: 572 Anatomy and Physiology)

574 Anatomy and Physiology

3 Credits

2 Class Hours, 2 Laboratory Hours

Continued study of gross and microscopic anatomy, the relationship of function to structure, with emphasis on basic physiology. Dissection of foetal pig and cat and chemical tests are also included.

(Prerequisite: 573 Anatomy and Physiology)

575 Histology and Embryology

3 Credits

2 Class Hours, 2 Laboratory Hours

Lecture and laboratory study of the fundamental body tissues and different phases of embryonic development. Emphasis is on the origin and structure of the tissues of the oral cavity.

(Prerequisite: 573 Anatomy and Physiology)

585 Pharmacology

3 Credits

3 Class Hours

The action of drugs, their sources, properties, preparation. Administration, the mathematics of pharmacy, and prescription writing are also studied.

(Prerequisites: 533 or 574 Physiology and 550 or 559 Microbiology)

587 Public Health

2 Credits

2 Class Hours

An over-all picture of public health (history, philosophy, structure, services), with emphasis on community dental health. Field trips to various health agencies.

PHYSICAL EDUCATION

01 through 06 Physical Education

1 Credit each

2 Laboratory Hours

Basic instruction in a variety of carry-over sports, such as archery, badminton, bowling, golf, horseshoes, tennis, weight training. Also participation and rudimentary instruction in football, soccer, basketball, volleyball, softball, tumbling, wrestling and physical fitness.

Note: Students enrolled in Physical Education must wear a regulation gym uniform, which can be purchased at the College Book Store.

09 Standard First Aid Course

1 Credit

1 Class Hour

Fundamentals of first aid as outlined by the Standard Red Cross course. Oral reports on a variety of health topics. For Dental Hygiene students, additional specialized seminars will be conducted.

EXTENSION DIVISION

Evening Program

The College's Extension Division offers courses at night for people who are employed during the day and who still want to continue their education on a part-time basis.

There are four general categories of students in the Extension Division — those seeking an Extension Diploma, those with the diploma who are studying for an Associate in Applied Science degree, those seeking to be approved by state or other licensing authorities in particular fields, such as insurance or real estate, and those taking courses because of their own interest in the subjects.

The Extension Diploma is recognized by many local industries. It requires four to five years for a student to earn enough credits for it, if he attends classes two evenings per week during both terms of the school year. It takes a student another four or five years to get his degree, again if he attends classes twice weekly. Yet some students have earned their degrees this way.

The evening program has approximately the same number of students as the day program. A high school diploma or its equivalent is necessary for admission to classes in the evening program, and most of the evening classes are approved by the Veterans Administration.

The Extension Division has a catalog of its own, and anyone wishing further information about this division is advised to consult that catalog. It is available from the Extension Division of the College.

Summer Program

Broome Tech offers a varied program of college-level courses during its summer session. These are designed primarily to meet the needs of students from Broome Tech or other colleges who wish to take additional courses, make up work, or want to lighten their future study burden. Transfer credits were accepted by 75 colleges in 1962.

In addition, there are some non-credit courses given for high school graduates and students who feel the need for improvement in particular subjects.

Details about the summer program are contained in a special catalog distributed by the Extension Division.

PRE-TECHNICAL PROGRAM

The Pre-Technical program offers a unique college opportunity to those high school graduates who are not adequately prepared for admission to college. It consists of a year of study at Broome Technical Community College, taking courses that will prepare one for entry into the regular college curriculum, primarily in one of the technical fields.

High school graduates who either do not have the proper courses or high enough grades to enter college can bolster their entry qualifications by taking this Pre-Technical program. This has been the gateway to college for many students who did not apply themselves sufficiently to their high school studies or who have "found" themselves late in their high school careers.

Many students who have worked for a year or two after high school have also used this "Pre-Tech" program to gain admission to Broome Technical Community College, as well as to other schools.

Students study mathematics, chemistry, physics, mechanical drawing and English during their Pre-Tech year. The teaching pace is faster than in high school, yet not as rapid as in college.

The Pre-Tech program is six years old, and experience has shown that only about seven per cent of those who complete the Pre-Tech year and go on to college fail to get their degrees, compared with a national average of about 45 per cent who fail to earn degrees. Thus the Pre-Tech training, which has grown from 32 students in 1957 to 120 last year, has given many an additional opportunity to prepare for college.

Pre-Tech students have all the privileges of regular full-time day students, except that they are not eligible to play on varsity athletic teams and they receive no college credits for most of their courses.

Curriculum Outline

1 YEAR

		Hours per Week		
Term 1 (Fall)		Class	Lab	Credits
8068	English	3	0	0
8010	Elements of Technical Mathematics	4	4	0
8020	Elements of Technical Physics	3	2	0
8024	Elements of Chemistry	3	2	0
8430	Engineering Drawing	0	3	1
		13	11	1
Term 2 (Winter)				
8069	English	3	0	0
8011	Elements of Technical Mathematics	5	0	0
8021	Elements of Technical Physics	3	2	0
8025	Elements of Chemistry	3	2	0
8431	Engineering Drawing	0	3	1
		14	7	1
Term 3 (Spring)				
8070	English	3	0	0
8012	Elements of Technical Mathematics	5	0	0
8022	Elements of Technical Physics	3	2	0
8026	Elements of Chemistry	3	2	0
8432	Engineering Drawing	0	3	1
		14	7	1

PRE-TECHNICAL PROGRAM

Course Descriptions

8010 Elements of Technical Mathematics **0 Credits**
8011 **4 Class Hours, 4 Laboratory Hours**
8012 **0 Credits**
5 Class Hours

This is a three-term sequence of integrated mathematics involving a mature treatment of algebra, geometry and trigonometry. Special attention is given to technical computations and problems using the slide rule, logarithms, scientific notation and dimensional analysis. The work in mathematics is continuously correlated with the work in physics and chemistry.

8020 Elements of Technical Physics **0 Credits**
8021
8022

3 Class Hours, 2 Laboratory Hours

Mechanics, heat, sound, electricity, light, and the study of the properties of matter.

8024 Elements of Chemistry **0 Credits**
8025
8026

3 Class Hours, 3 Laboratory Hours

Fundamental definitions, principles and theories, family relationships of important elements and their compounds, chemical calculations and practical applications.

8068 English **0 Credits**
8069
8070

3 Class Hours

This is a three-term sequence designed to improve the student's mastery of reading, speaking and writing. Grammar, spelling and punctuation are stressed, along with the organization of ideas for effective writing. The development of such reading skills as speed, comprehension and vocabulary building are also covered.

8430 Engineering Drawing **1 Credit**
3 Laboratory Hours

Fundamentals of engineering drawing, such as simple multiview drawings and sketches. Accuracy and neatness in lettering and linework are emphasized.

8431 Engineering Drawing **1 Credit**
3 Laboratory Hours

Orthographic projection, auxiliary views, sectional views, pictorial drawing, free hand drafting. Continued emphasis on accuracy and neatness.

8432 Engineering Drawing **1 Credit**
3 Laboratory Hours

Developments and intersections, threads and fastenings, welding drawings, working drawings, exploded views.

MAP OF THE CAMPUS

1. TITCHENER HALL

Engineering Science
Liberal Arts
Audio-Visual Center

2. ADMINISTRATION BUILDING

Administratives Offices
Library
Business Department

3. SCIENCE BUILDING

Dental Hygiene
Medical Office Assistant
Chemical Technology

4. ELECTRICAL BUILDING

Electrical Technology

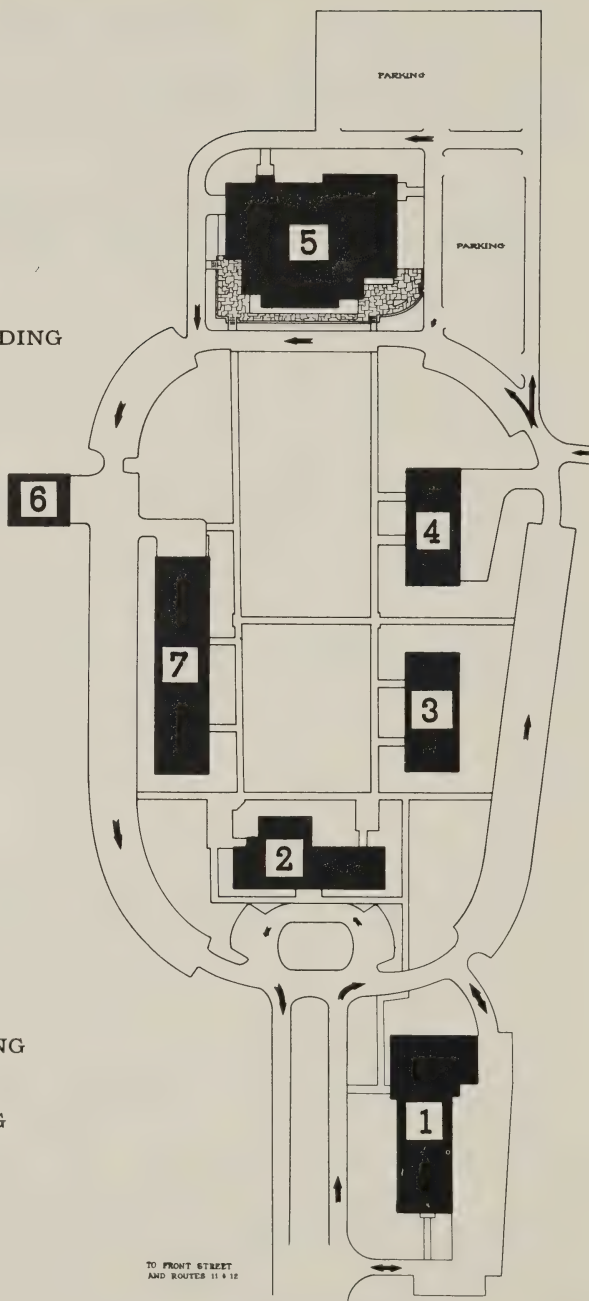
5. STUDENT CENTER

Gymnasium
Cafeteria
Little Theater
Student Lounge
Book Store

6. MAINTENANCE BUILDING

7. MECHANICAL BUILDING

Mechanical Technology
Civil Technology



THE CAMPUS AND ITS LOCALE

The Broome Tech campus is located three miles north of Binghamton on Upper Front Street, which is Route 11 and Route 12 at this point. Six of the seven buildings form a quadrangle to make a compact campus layout. The seventh building, dedicated in May of 1962, is just outside the quadrangle.

The buildings are all two stories high, of modern functional design, and made of brick with colored panel-wall facing. They lie in a suburban setting in the virtual center of the college's 53 acres of land.

In addition to classrooms and laboratories, the campus has its own cafeteria, a fine gymnasium and athletic field and a Little Theater, as well as a rapidly-growing library. These facilities add up to make the campus a \$5,000,000 investment in the youth of Broome and surrounding counties.

Broome County is an industrial and agricultural area in New York State's Southern Tier. It is in the approximate center of the state, measuring from East to West, and its southern extremity touches the Pennsylvania state line.

Binghamton is the principal city in Broome County, but it is an integral part of the community known as the Triple Cities. Endicott and Johnson City are the other two cities, but Vestal and other outlying suburbs help to make the community much larger in population and geography than the city limits of Binghamton.

Binghamton has a population of 75,941, yet the Triple Cities area embraces 148,524 people. The population of Broome County is 212,661. Diversified industry has made the community an economically sound one.

The College has become an integral part of the community since it was started in 1947. Many of the campus facilities are offered without charge for use by responsible organizations, and most of the College's curriculums are designed to help fill the economic needs of the county.

AUDIO-VISUAL AIDS

Students and faculty have many audio, visual and audio-visual aids at their disposal through the Audio-Visual Department. These can be used for classroom or co-curricular purposes, and they include films and film strips, a preview room, an art workshop, tape recorders, transparent and opaque overhead projectors, as well as slide projectors.

The department makes signs and posters, handles the ordering, distributing and locating of films for faculty members, and provides the materials and assistance in the art workshop.

THE LIBRARY

In seeking to fulfill its aims of furthering the objectives of the College, Broome Tech's library has developed the most complete collection of technical works in the Southern Tier area. More than half of its 15,000 books, pamphlets and government documents are in the scientific and engineering fields, covering both basic and advanced phases.

In addition, the library subscribes to more than 300 periodicals, most of which are available in permanent form. It also combines facilities for research and leisure reading for both students and faculty.

Part of the library's purpose is to stimulate intellectual curiosity and to provide the means for independent research. Consequently, three librarians are on hand to instruct students in the profitable use of the library's resources.

The library's facilities and services are available to the public and to evening division students, too. As a result, it is open until 9 p.m. Monday through Thursday from September to June. The library also cooperates closely with other libraries and with business firms and industry in the community.

Located in the southwest wing of the Administration Building, the library has a capacity for 20,000 volumes. This total is rapidly being reached, as works in cultural and recreational fields, as well as in the ever-changing technologies, are continuously being added.



CO-CURRICULAR ACTIVITIES

The College recognizes the fact that student experiences outside the classroom are important in one's over-all development. For this reason the College supports an active co-curricular program as a complement to the academic program. The variety of activities on the campus reflects the diversification of student interests and provides the opportunity for students to develop talents, leadership ability and a sense of social responsibility.

Co-curricular activities are guided by two faculty-student committees — the Student Activity Committee for non-athletic activities and the Athletic Board of Control for sports.

The Student Activity Committee consists of four faculty members and the president of the Student Council. It approves, recommends and supervises the policy of all student activities, except athletics.

The Athletic Board of Control is composed of three faculty members, the director of athletics and one student. It develops and recommends policy for intercollegiate, intramural and club athletics programs.

Student Council

The Student Council, the governing body in student affairs, is the heart of the co-curricular activity program. The officers, elected from the student body, and the representatives from the various curriculums promote and coordinate the student activities. The Social Committee is one of the most important Student Council committees, as it is responsible for the extensive social program of the Council.

Honor Society

The College has the Mu Eta Chapter of Phi Theta Kappa, national honor society. It is open to freshmen and seniors who have achieved outstanding academic grades and who have been especially active in co-curricular participation.

Publications

Tech Talk is the campus newspaper and the *Citadel* is the College yearbook. *Tech Talk* is published semi-monthly and the *Citadel* is, of course, published just once a year. Positions on both publications are open to all students.

Tech Talk's purpose is to report news of the campus, student body and faculty. It also provides a place for students to express their ideas about campus activities and about events related to college life.

The *Citadel* provides a record, mostly pictorial, of the school year, and as such the objectives of its staff are to be historical as well as amusing.

Music

The Student Council sponsors three performing vocal groups — the College Choir and the Madrigal Singers, which are open to both men and women students, and the Tech Tone-Masters, a male glee club. On occasion, students perform with the faculty in a Faculty-Student Chorus.

The College musical organizations also have joined with the Civic Theatre of Binghamton for the cooperative production of Broadway musicals. In addition, an oratorio chorus of faculty, students and members of the community has performed the Handel oratorio, "The Messiah."

Theater Workshop

The Theatre Workshop is open to all students in good standing and is designed to provide its members with a serious interest in the mechanics of the theater and theatrical literature. It affords an opportunity to learn the basic phases of dramatic production and technique.

Two one-hour workshop productions per year are presented for the faculty, staff and student body, with every aspect of these performances except direction being handled by the students. Regular attendance at the regular two-hour sessions once each week is, therefore, required.

Technical Societies

Since many meetings of national professional technical societies are held on campus, students in the technology curriculums have the opportunity of becoming acquainted with professional men in their fields and of attending lectures, films and demonstrations of new developments. For example, Chemical Technology students are invited to attend local meetings of the American Chemical Society.

In addition, students in some curriculums have their own chapters of national professional engineering societies. Among these are:

ASTME, which is the American Society of Tool and Manufacturing Engineers.

IEEE, which is the Institute of Electrical and Electronics Engineers.

Some other curriculums have their own organizations, which expose the students to techniques and practices in their field of study. Among these are the Business Club, the Dental Hygiene Association and the Girls Friday Chapter of the National Secretaries Association (International) Binghamton Chapter.

Other Clubs

In addition to the co-curricular activities already listed, the following are open to all students in good standing:

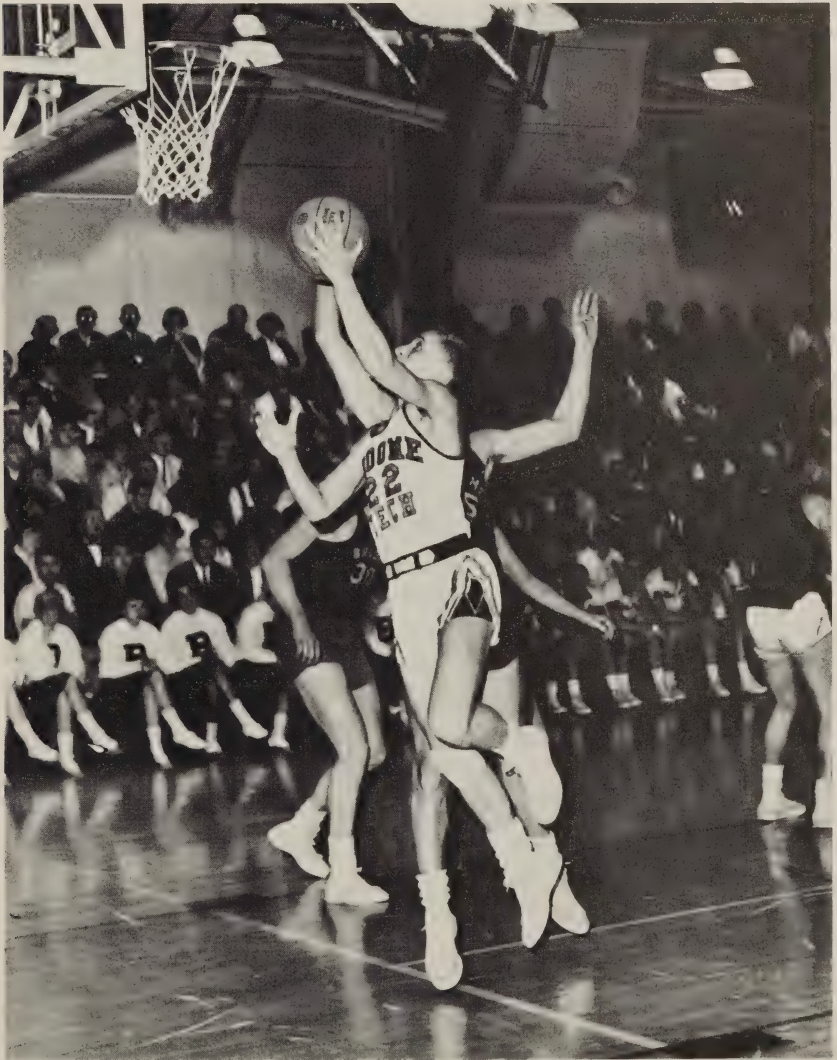
Circle K, Circlettes, Camera Club, Newman Club, Student Christian Association and the Young Republican Club. Details on the purposes and requirements for membership in these clubs are available in the Student Handbook.

ATHLETICS

Varsity Sports

Broome Tech fields varsity teams in six sports — basketball, soccer, baseball, cross-country, golf and for the first time tennis — and has acquired an excellent reputation for team play and sportsmanship.

The basketball team has captured the regional junior college championship for the last four years and has won 335 games and lost 92. The baseball team has won the last two regional tournaments played, the cross-country team was second best in the region last year, and the golf and soccer squads have also been regional powers in the past.



Intramural Sports

All students may participate in intramural sports. Men's teams representing the various curriculums compete for the coveted President's Trophy, awarded annually to the one acquiring the most points in a variety of activities. League competition is conducted in flag football, basketball, volleyball, soccer and softball, while students also compete in individual sports such as golf, badminton, archery, tennis and bowling.

Archery, skiing and co-educational bowling clubs offer additional opportunity for participation in recreational activities, although they do not count in President's Trophy competition.

Women's Sports

The College also has a varied sports program for women students. In addition to the Physical Education classes, there are intramural competition and All-Sports Days.

Intramurals will be contested in volleyball, badminton, tennis, archery, basketball, softball, bowling and Hurricane 9 (a modified form of touch football for girls). A trophy will be awarded to the winning team, similar to the President's Trophy for the men's intramurals champion.

The All-Sports Days consist of competition in varied sports against women's teams from other colleges, both at home and away.

Cheerleaders

There are two cheerleading squads — one consisting of freshmen which will function during soccer games in the fall of the year and the other made up of seniors which will lead cheers at the basketball games. Both men and women students are eligible to try out for positions on the two cheerleading squads.

In addition, the College has a Hornet mascot costume which will be worn during games by one of the students selected for the cheerleading squad.

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Agricultural and Technical Institute at Cobleskill
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(Locally-sponsored two-year colleges under the program of State University)

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Auburn Community College at Auburn
Bronx Community College at New York City

BROOME TECHNICAL COMMUNITY COLLEGE AT BINGHAMTON

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Dutchess Community College at Poughkeepsie
Erie County Technical Institute at Buffalo
Fashion Institute of Technology at New York City
Hudson Valley Community College at Troy
Jamestown Community College at Jamestown
Jefferson County Community College at Watertown
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BROOME TECHNICAL COMMUNITY COLLEGE
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